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ANTIVIVISECTION LEGISLATION: ITS HISTORY, AIMS AND MENACE *

W. B. CANNON, M.D.

BOSTON

The early triumphs of experimental biology, about the middle of the last century, led to its rapid development as a means of advancing knowledge of physiology, bacteriology, pathology and, later, of other medical sciences. Accounts and rumors of experiments on animals soon aroused fears that many cruel and needless operations were being performed. In Great Britain popular clamor, stirred by the energy of a group of doctrinaires, culminated in the appointment, in 1875, of a royal commission to investigate and report the conditions under which animal experimentation was being conducted. So little had the sciences of pathology and bacteriology profited at that time by use of the new method that physiology almost alone was on trial at the hearings. In spite of this limitation of evidence the strong testimony forced the commission to conclude that abolition of animal experimentation, conducted to mitigate human suffering and prolong human life, would be impossible; and the commission therefore recommended a law licensing proper persons to engage in the practice, ensuring the avoidance or minimizing of pain, and providing for inspectors "of such character and position as to command the confidence of the public no less than that of men of science."

A writer in *Nature*, at that time (1876, p. 248), characterized this recommendation and its result in legislation as follows: "The evidence on the strength of which legislation was recommended went beyond the facts, the report went beyond the evidence, the recommendations beyond the report, and the bill can hardly be said to have gone beyond the recommendations, but rather to have contradicted them." Some of the most objectionable features of the bill, according to Sir Michael Foster,[1] were added as it was being passed through committee in Parliament.

The result of this measure has been that all British experimenters work on ticket of leave. The securing of the ticket is a slow process because of the large amount of red tape involved. In consequence, sudden or unexpected opportunities for research cannot be utilized. And if in the course of an investigation a new line of inquiry is suggested — an event which is often the most valuable and significant phase of the investigation — the ticket must be amended or a new ticket must be secured, to permit work in the new direction, and that means further delay and vexation and cooling of enthusiasm. Furthermore, for some experiments, securing a ticket is so hopeless that investigators must leave their work incomplete or go abroad in order to be permitted to pursue it. Study of the effects of snake-bite, for example, and search for antidotes — a matter of great importance to India because of the high mortality therefrom — had to be suspended in Great Britain because of the British act of 1876.[2]

One might suppose that, having secured such a degree of restriction of experiments on animals, the antivivisectionists would have rested content. Quite the contrary, however. Agitation against animal experimentation has nowhere else in the world been so violent and so continuous as in Great Britain during these past thirty-six years. In 1906, thirty years after the British antivivisection act was passed, the clamor and constant agitation led to the appointment of a second royal commission. After a very exhaustive inquiry, and after four years of study of the testimony, the commission reported that the scientific investigators, with rare exceptions, have "endeavored, with loyalty and good faith, to conform to the provision of the law," and that "the harrowing descriptions and illustrations of operations inflicted on animals, which are freely circulated by post, advertisement or otherwise, are in many cases calculated to mislead the public." The second commission merely suggested a few minor changes in the law, all of them within the province of the administration, and not requiring amendment of the act by Parliament.

I have reviewed in some detail the conditions in Great Britain, because they offer an example for us. In spite of drastic legislation, which, as a "penal measure" (it was thus referred to at the time of its passage), placed scientific investigation under suspicious surveillance, antivivisection societies have multipled, their activities have been unrestrained, and their aims now are avowedly the total abolition of what has proved to be the most fruitful mode of progress in the medical sciences. Thus the passage of legislation in Great Britain has, on the one hand, hampered and limited the efforts of investigators, and, on the other, utterly failed to satisfy the demands of the antivivisectionists.

The reason for the two parties being irreconcilable, the reason for compromise being impossible, lies fundamentally in a difference of moral emphasis. No longer is it the main contention of the antivivisectionists that the use of animals for medical research is unprofitable,

* This paper is one of the series prepared for and reprinted by the Bureau for the Protection of Medical Research of the American Medical Association for circulation among the public. Twenty-five of these pamphlets are now ready, taking up the relations of animal experimentation to ethics, diagnosis, cancer, vaccination, the live stock industry, tuberculosis, typhoid, dysentery, plague, rabies, surgery, internal secretions, the circulation of the blood, protozoan tropical diseases, etc.

1. See letter in Hearing on a Vivisection Bill (S. 34), Senate Committee on District of Columbia, Washington, 1900, p. 99.

2. Minutes of Evidence, Royal Commission on Vivisection, 1907, Question 6833.

though that argument, strange to say, is still heard; they now take what they call "higher ground" and say that their opposition is based on the great moral wrong involved in the sacrifice of animals for man. As one of their witnesses stated, "I would not have one mouse painfully vivisected to save the greatest of human beings, or the life dearest to me." And recently a writer, in the Philadelphia *Journal of Zoophily* (December, 1912), has declared, "Vivisection is utterly detestable. It is immoral and demoralizing. Antivivisectionists should keep up an unceasing agitation and work unitedly in asking legislatures for laws of an entirely prohibitory character." All the antivivisection societies of Great Britain, and all but two or three of the societies in this country, exist expressly for the purpose of abolishing utterly operations on animals for medical and biological research.

The opposite moral attitude, that taken by the investigators, was expressed by the second British commission. Basing their judgment on the "average moral sense of Christian communities," which is "not offended by the sacrifice of lower animals for the food, clothing, adornment and, within limits, the sport of man," they concluded that properly conducted experiments on animals "are morally justifiable and should not be prohibited by legislation."

Although most antivivisectionists are ultimate abolitionists, and although some among them vigorously denounce merely restrictive legislation as a wicked compromise, which will seriously endanger the securing of their real aim, yet others among them have been quite ready to obtain any legislation whatever to which they might point as a mark of progress. Any sort of specious argument may be expected, when some legislation, even the most trivial and insignificant, is all that is wanted at first. Thus antivivisectionists have declared that their prime object is to stop the abuse of animals by ill-trained physicians, or by raw medical students, operating in private rooms, and that expert investigators and physicians interested in the promotion of medical research ought to be therefore strong supporters of their endeavors. Before this argument is accepted a review of the attempts to obtain restrictive legislation in this country will be instructive.

The most energetic and persistent efforts to have restrictive laws enacted have been made in Massachusetts, New York, and Pennsylvania. I am best acquainted with the agitation in Massachusetts. Seventeen years ago there was presented to the Massachusetts legislature a relatively drastic bill aimed at the limitation and supervision of the experimental use of animals. At the first hearing the crowd was so great that the largest committee room was not large enough, and the meeting had to be adjourned to the old hall of representatives. The petitioners for legislation were ably represented by counsel. The remonstrants appeared as laboratory workers and practitioners of medicine and surgery to testify to what they knew and give reasons for objecting to the proposed bill. After several hearings the committee, convinced of the needlessness of any such bill, voted unanimously that the petitioners be given "leave to withdraw." Then came the sequence of "milder" bills. Attempts with these "milder" bills were made almost every year for the next decade.

During all these later years the laboratory workers conducted their own case; the petitioners were represented by able counsel; invariably the committee refused to report the bill. There was never any popular demand for legislation; interest was kept alive solely by the efforts and money of a few agitators. The number of petitioners attending the hearings gradually dwindled until, at the last, only their hired lawyer and a few elderly ladies constituted the remnant of the great crowd that came in 1896. Every victory for freedom of research made another victory easier, and just because committees again and again had found no reason to enact restrictive legislation, and because at each successive attempt the petitioners could advance no new arguments, it became always more possible to point to the fate of previous bills as a precedent to follow. In other words, the efforts of the antivivisectionists became classified in the legislative mind as chronic and unjustifiable.

In the course of these repeated hearings the most effective way of presenting the medical and biologic view was gradually developed. It consisted, towards the last, of the testimony of representatives of the educational institutions of the state, the colleges, medical schools and separate biologic laboratories, representatives of the several branches of the medical sciences, representatives of the state and city boards of health, representatives of the cattle bureau, representatives of hospitals, and prominent physicians and surgeons — in short, persons who knew thoroughly every interest that would be seriously affected by limitation of the use of animals for instruction and research. One person was selected to speak for each of the interests concerned and he was limited to ten minutes. Thus the objections to the bill were described to the committee in a series of brief, pointed speeches, so diverse in style and personality as to hold close attention. At the end the leader of the remonstrants summed up the general objections to the proposed bill and answered any arguments that previous speakers might have left untouched.

The history of the agitation in Massachusetts has been repeated in New York. The money of a few individuals has purchased the services of lawyers and a public speaker; and with this subsidized enthusiasm and with the aid of a newspaper made hostile because its disreputable advertising was stopped by the action of a local medical society, the small group of antivivisectionists began their usual tactics. Through pamphlets, leaflets, exhibits, special articles and lectures they thoroughly misrepresented the methods and the results of animal experimentation, until they obtained a considerable following of kind-hearted people who believed that the atrocities they described were actually being perpetrated within the confines of the state. Along with this misleading effort to rouse a detestation of the methods of medical research, the antivivisectionists tried to secure laws of a hostile character. Numerous fruitless attempts were made to enact restrictive bills, each less drastic and more plausible than its predecessors, and then, with steadily diminishing interest at the hearings they took a final step downward in their demands and are now asking for a commission of inquiry. This is the mildest and apparently the most reasonable request that they have made. Who is not appealed to by the call for an "open door"? But this request is supported by the same persons who formerly urged outright antivivisection bills and by some who, in their publications, advocate that animal experimentation be abolished. The present effort, therefore, is merely another attempt to get legislation started in one state so that it may be an example to others. There is no general demand for such investigation; it is assumed in the call for an "open door" that the doors of laboratories are now shut against experienced

persons (which is untrue); and the conduct of the investigation is placed not with judicially-minded persons, but with persons some of whom are committed in advance to an antagonistic attitude. Again the British experience may properly be cited to show the futility of attempting to secure any respite from abuse and vituperation by bending to the wishes of persons who are intent on doing their utmost to harass and impede the progress of medicine.

Experience in Massachusetts, New York and elsewhere has not only revealed the main provisions likely to be found in antivivisection bills, but has also brought forward the chief objections to these provisions. A brief summary of these points will be instructive:

1. *Experimentation is restricted to registered buildings.* This is impracticable, in the case of medical emergencies in country places, and would entail difficulties in experiments on diseases of animals used on farms, and of game animals, and hence would be inimical to the farmers and sportsmen of a state. In Great Britain portions of grouse-moors have been necessary for the study of "grouse disease." And Pasteur's proof of immunization against anthrax was made in field operations remote from his laboratory in Paris.

2. *Experimentation is restricted to the purpose of discovering new facts useful in saving or prolonging life or alleviating suffering.* This provision prohibits the use of animals (on the way to death in anesthesia) for the acquirement of technical skill. Thus persons training to practice surgery, for example, would be forced strictly to obtain their first experience by operating (or experimenting!) on human beings instead of the lower animals.

Furthermore, the provision abolishes the use of animals for teaching and demonstrating the methods and facts of physiology, and of all the other experimental biologic sciences, however free from pain these uses are. And, as is generally recognized, to learn to judge the functions of the body by studying inactive structure alone would be like learning to take the responsibilities of an engineer by examining an idle locomotive.

3. *The animal experimented on must be under a general anesthetic.* Often quite as effective anesthesia is produced by a local as by a general anesthetic and, furthermore, much less discomfort is likely to attend local anesthesia and there is no distress in recovering from it. Restricting experimentation to animals under general anesthesia, furthermore, prevents any attempt at finding new anesthetics, and thus either definitely limits mankind to those now employed, or requires the first tests to be made on human beings.

4. *Animals must be killed before recovering from anesthesia.* This process stops absolutely all work in experimental surgery, and in the application of surgical methods in physiology and pathology. If this condition had been enforced during the past fifteen years, some of the most valuable advances in medicine would have been rendered wholly impossible.

5. *Every experimenter must make a report in writing, at certain times each year, stating the nature and results of his studies.* The compulsory reports of all experiments would probably have as their only practical result ignorant prosecutions, followed by acquittal. Nothing is more evident in antivivisection literature than the inability of persons equipped mainly with ignorance and prejudice to read with understanding the technical reports of experts. Misunderstanding necessarily ensues. It is against sound public policy to discourage legitimate experimental work by the prospect of such prosecutions.

Still another objection to compulsory reports is the danger to the community which might result from the premature publication of insufficiently tried methods of treating disease. Koch's forced premature publication of the action of tuberculin may serve as an instance, but more recent instances are not lacking. Cruelly false hopes, bitter disappointments, the spending of large sums uselessly in traveling far to seek relief from disease or to avoid death—such are the evil results that may flow from compulsory publication.

6. *Laboratories in which animal experimentation is being performed shall be open to inspection by authorized agents.* (Sometimes the bill specifies that these agents shall represent humane societies.) This provision has always met strong opposition—opposition which must be clearly defined, because it is usually taken by the antivivisectionists as a confession of fear of detection in cruel deeds. To this innuendo, however, as Curtis has said, "Common sense calmly replies that no legitimate work in any calling can go on effectively in the presence of unbidden and ill-informed persons, suspicious if not hostile."

The appointment of persons whose qualifications to inspect laboratories are not stated is unjustifiable. To inspect banks experts in banking are appointed; to inspect laboratories experts in experimentation should be specified. The grossest errors of judgment have been made by ignorant persons, incapable, for example, of distinguishing between reflex movements of brainless animals and purposive acts. But the petitioners for restrictive legislation will not admit that experts in experimentation are fit persons to trust.

Even when inspectors are competent, as British experience has shown, they either become suspected of being in league with the experimenters, because they so rarely report abuses, or they are said not to be present in the laboratories when the atrocities are being perpetrated. Not content with occasional inspection, therefore, the British antivivisectionists are now advocating constant attendance of inspectors in laboratories so that nothing may escape scrutiny. The absurdity of this scheme is its strongest condemnation. Evidently no amount of inspection is going to satisfy the agitators unless their preconceptions are to be substantiated.

Besides the foregoing special objections to bills which are hostile to operations on animals, there are certain general objections:

1. *Restrictive legislation is not needed.* The welfare of the animals used in experimentation is already safeguarded by voluntarily imposed regulations providing for their bodily comfort, for their use in important purposes, and for their freedom from pain. The regulations, drawn up by the Bureau for the Protection of Medical Research of the American Medical Association, have been adopted by corporate vote in practically every medical school in the country in which research is being conducted. Mr. Henry Bergh, of the American Society for the Prevention of Cruelty to Animals, has referred to these as "the most exemplary, humane and beneficent regulations governing the practice of vivisection to meet the requirements of humanity." Only the director of the laboratory can make exceptions to the rules and he can do so only in the rare case in which anesthesia or death of the animal would defeat the object of the experiments.[3]

3. See Cannon, W. B.: Medical Control of Vivisection, Defense of Research Pamphlet, xvi, 1910.

The general adoption of the regulations in schools with active laboratories renders further legislation unnecessary. Burdening the statute books with unnecessary legislation is admittedly reprehensible.

2. *Such restrictive legislation is indefensible class legislation.* It is the function of the state to enact general laws against cruelty to animals; the proposed legislation places scientific men under peculiar surveillance and limitation. This is unwarrantable. The general laws regarding cruelty are adequate to cover cases of wanton infliction of pain, no matter by whom inflicted. A few years ago a professor in a veterinary school was convicted of cruelty on this basis, whether justly or not is not now pertinent; the fact is that the existing general law was adequate. Similarly two students of "optometry," in New York, were convicted under the general law providing for the punishment of causing in animals "unjustifiable physical pain, suffering or death." It is proper, therefore, to demand that the general laws against cruelty be applied before special legislation is framed.

3. *Such restrictive legislation is merely initial—an entering wedge—advocated with the purpose of advocating later more stringent law.* In the *Journal of Zoophily* (March, 1909) is this statement:

> We believe that in the course of time we shall have total abolition of vivisection, but as we cannot get it now, we think we may be justified in asking for something that will help the poor animals a little. Though we may not get abolition at once, we shall eventually.

This is the attitude taken by the moving spirits among the opponents of animal experimentation everywhere. As already shown, Great Britain has had a restrictive law, with registration of buildings, reports of experiments, and inspection, for thirty-six years. Yet there is no country in which agitation for abolition of animal experimentation is more active. The passage of the proposed legislation would therefore not allay agitation.

No other civilized country has followed Great Britain's lead; no British dependency has done as the mother country has done. As Sir Michael Foster declared, with reference to the British Act, "England offers in this respect at least an example to be shunned alike by her offspring and by her fellows."

In conclusion I wish to urge that everything possible be done to enlighten the intelligent public as to the great practical results of animal experimentation, the important problems that remain to be solved, the ideals of the investigators who are trying to solve these problems, and the essential humanity of their methods. The pamphlets published by the Bureau for the Protection of Medical Research of the American Medical Association, and the leaflets issued by the Committee on Experimental Medicine of the New York State Medical Society present an overwhelming array of facts highly serviceable in such education. Physicians who use in daily practice the results of laboratory investigations can do nothing more useful to medical progress than combating antivivisection arguments and explaining the dangers of compromise.

And I also wish to urge further that sharp watch be kept on attempts to secure legislation that now or in the future would hamper, or in any way interfere with, the efforts of men engaged in medical research. Our opponents will try to get a foothold in one state or another; and when they have done so they will point to that accomplishment as the result of their own prowess and as evidence of humanity and enlightenment of the people. And on the basis of action in one state they will begin work in others. For the welfare of mankind we must not permit their views to prevail.

Welch has summed up very precisely the reasons for opposing the efforts of the antivivisectionists. "The fundamental objection," he declared, "to the various legislative proposals to regulate animal experimentation by a system of licenses, of inspections, of specifications as to the purposes and conduct of the experiments, is that the enactment of such statutes would take the control of a matter of the highest importance to human welfare, and one requiring special knowledge and training and skill, out of the hands of the experts, who possess these qualifications, and would place it in charge of those who have not the requisite technical knowledge and experience. Not those who know, but those who do not know, would be given a discretion which might prove disastrous to the future of scientific medicine. This is a monstrously wrong principle to embody in legislation. Science has waged a long warfare through the centuries for freedom of investigation. The last of its battles is being waged to-day for freedom of experimental research in medicine. While I do not doubt the issue of this battle, I conceive it to be the duty of the public and of the press to support the cause of freedom in this contest, which is likewise that of true humanity."

Further information regarding antivivisection agitation, and regarding the value of animal experimentation to mankind, can be obtained by addressing the Bureau for the Protection of Medical Research of the American Medical Association, 535 Dearborn Avenue, Chicago, or the Committee on Experimental Medicine, New York State Medical Society, 17 West Forty-Third Street, New York City.

VERTIGO

ALFRED C. REED, M.D.
Assistant Surgeon, United States Public Health Service
NEW YORK

From the subjective functional standpoint, the disturbance of bodily equilibrium characteristic of vertigo may be caused by two conditions. First, integrity of orientation in space is dependent on the harmonious interrelation of the different impressions coming to the brain from the end-organs concerned with the sense of spatial orientation. Hence this sense may be disturbed by lack of harmony in these impressions. Second, paralysis of certain of the muscles of the eye may produce vertigo, because under such conditions the images do not fall in corresponding parts of the retinae, and are as a result projected into different points in space by the two eyes, giving a sense of disorientation. Vertigo is always a symptom only and, while it requires relief, its diagnostic significance is of the highest importance. It is a good rule to make a careful differential diagnosis in every case.

The indications in any case of vertigo are (1) to diagnosticate and relieve or remove the underlying or essential cause of the condition, and (2) when this cause is not quickly evident, or the vertigo is reflex in origin, to institute measures directed toward the relief of the immediate dizziness and concomitant symptoms.

DIAGNOSTIC SIGNIFICANCE OF VERTIGO

The first indication — to determine the diagnostic significance of vertigo — is of the highest importance. To reach a sound judgment as to the essential cause of

a vertigo it is necessary to keep in mind a clear classification of the conditions which may produce it, and by a process of elimination and association with other cardinal symptoms, arrive at the underlying cause. It is important clinically to consider first the approximate age of the patient and then to ask what type of vertigo is most apt to occur in that period. Dana[1] has given an excellent classification of the different forms of vertigo, which needs but to be arranged in age groups to be of the highest clinical use.

1. *Relation of Age to Cause of Vertigo.*—In the vertigoes of childhood, mechanical causes such as swinging play a prominent rôle. In any case of more than transient dizziness in a child which cannot be definitely assigned to mechanical causes, the first consideration is the ear. Most commonly the condition is due to a middle-ear infection which follows the acute infectious fevers, as measles, diphtheria, scarlatina, or pneumonia, and in which the labyrinth is involved. It must be remembered also that anemia and malnutrition may be responsible for the vertigo or it may be associated with functional disturbances of the heart. Again the vertigo of cerebral abscess and cerebellar tumor will be seen occasionally.

In early adult and middle life the vertigo can be traced most often to a vascular or reflex source, depending for instance on some disorder of the liver, stomach, intestine or female genital organs, or to arterial or myocardial changes. In this period ocular changes are fairly frequent, and of course mechanical and aural vertigoes are found. With increasing age the vascular and certain types of reflex vertigoes become more common. It is well to bear in mind this relation of age to the cause of a vertigo, in turning to a more detailed review of the various types.

2. *Vertigo Caused by Reflex Irritation.*—The more common forms of vertigo fall under Dana's group caused by reflex irritation, as from the stomach, liver, intestine, pelvis, etc. In treating these a sharp purgative may be followed by some such prescription as the following:

℞	Tincture of nux vomica	5 parts
	Tincture of cannabis indica	8 parts
	Sodium salicylate	10 parts
	Aromatic elixir, enough to make	60 parts

Make a solution to be taken a teaspoonful three times a day after meals.

With acholic stools, incipient jaundice, and hepatic torpor, a stomachic and hepatic stimulant may be combined, as in the following:

		gm. or c.c.	
℞	Ext. nucis vomicae	0.150	gr. ii
	Oleo res. capsici	0.300	gr. iv
	Fellis bovis purif.	4.800	ʒ i
	Res. podophylli	0.210	gr. iii

Fiat massa et divide in pilulas xx.
Sig.: Take one pill after each meal.

3. *Vertigoes of Neurotic Origin.*—Somewhat similar to certain reflex vertigoes are those of a neurotic origin. Vertigo is a common symptom in neurasthenia and in various degrees of nervous and emotional stress; it may almost reach the dignity of a psychosis in these cases. According to Barany,[2] the vertigo of neurasthenia is characterized by a nystagmus with irregular movements of the eyes, never by the quick motion and slow return of labyrinthine vertigo. Neurasthenic vertigo is apparently independent of any labyrinthine disease. Palliative treatment here is secondary to a thorough and long-continued attack on the fundamental neurotic condition.

4. *Vertigo due to Vascular Conditions.*—Vertigo may be due to purely vascular conditions, as in the congestion or ischemia accompanying cardiac disease, arteriosclerosis, anemia or aneurysm especially of the thoracic aorta, all of which seriously affect the intracranial circulation. Obviously the indications here are to remedy the anemia, improve the efficiency of the heart, and, so far as possible, alleviate the effects of arterial degeneration. Treatment must therefore be directed to these cardiovascular conditions, keeping in mind that the vertigo is merely a symptom. Under this classification also fall the vertigoes due to toxins in the blood as in alcoholism and chronic nephritis. Here again the relief of the vertigo is incidental to the relief of the toxemia. Such conditions require free catharsis and diuresis, and perhaps no better diuretic can be used than theobromin-sodiosalicylate in 10-grain doses three times a day.

5. *Vertigoes of the Auditory Type.*—An important group of vertigoes with which the general practitioner is too apt to be unfamiliar comprises those of the auditory type. The importance of this group rests in the fact that here vertigo may signify serious and often dangerous organic disease. Auditory vertigo is due to some disorder of that branch of the eighth nerve concerned with space sensation. Many minor forms arise from congestion or ischemia of the middle-ear. The auditory nerve has two divisions. The first, the nerve of hearing, leads from the cochlea to the medulla and thence finally to the first and second convolutions of the temporosphenoidal lobes. The second branch leads from the semicircular canals to the middle lobe of the cerebellum, and thence forward to the cerebrum. Injury to this second branch in any part of its course causes a disturbance of space sensation and vertigo. Naturally the most common point of injury or stimulation of this nerve is in its end-organ in the labyrinth. A change of intralabyrinthine pressure, such as so often follows a quick and complete closure of the eustachian tubes, can produce such stimulation of the vestibular nerve. The air in the tympanic cavity is soon absorbed and the drum-membrane is pressed inward. Sudden deafness with tinnitus, stuffiness and dizziness, of a severity which may disturb the equilibrium, are the result. It is a mechanically induced condition, and opening the eustachian tubes with a catheter or forcing air through them with a Politzer bag or by forced expiration with the nostrils closed gives relief.

In this connection it is to be remembered that the ordinary mechanical vertigo due to a sudden difference in pressure between the external air and that in the cavity of the middle ear, such as occurs in changes of altitude, working under high air-pressure, etc., rarely requires treatment. Gradual accommodation to the new pressure and the act of swallowing usually suffice to equalize the air densities. In cases of inflammatory or other occlusion of the eustachian tubes, catheterization or inflation with a Politzer bag may be repeatedly necessary unless the tubes become normally patulous.

Much more serious is the true labyrinthe vertigo due to organic disease. Kerrison[3] classifies this type as the vertigo of vestibular irritation and the vertigo of vestibular paralysis. The irritative form he assigns to one of two causes. It may follow a comparatively mild labyrinthine inflammation or congestion, which irritates

1. Dana, C. L.: Vertigo, Internat. Clin., Series 2, iv, 115.
2. Barany, Robert: Physiologie und Pathologie des Bogengangs Apparates beim Menschen, 1907, Leipsic and Vienna.
3. Kerrison, P. D.: Labyrinthine Vertigo, New York State Jour. Med., Aug. 12, 1912, p. 418.

the end-organ of the vestibular nerve without destroying its function, or it may result from lesions which suddenly destroy or at least markedly decrease the function of these end-organs. This last process is equivalent to stimulation of the healthy labyrinth. The two labyrinths in health balance each other and act as a single organ. But if the function of one suddenly ceases, the unbalanced and excessive activity of the other for a time produces the symptoms of vestibular irritation, among which is vertigo.

Kerrison classifies the symptoms of vestibular vertigo as follows: Subjectively, it is rotary in character, external objects seeming to revolve around the patient. With closed eyes the patient feels that he himself is rotating rapidly. Objectively, the vertigo is invariably accompanied by vestibular nystagmus, in which there is a quick movement of the eye in one direction, and a slow return in the opposite direction. Voluntary rotation of the eye in the direction of the quick movement increases both the nystagmus and the vertigo. Barany's rule is to the effect that a vertigo not accompanied by a nystagmus and not influenced by the position of the eyes is not of vestibular origin.

The patient with vestibular vertigo tends to sway or fall in the direction opposite to the quick movement of the nystagmus and, therefore, will fall in different directions according to which way the head is turned. Kerrison points out that a vertigo accompanied by a nystagmus just like that here described, but in which the patient sways or falls regularly in one direction, no matter how the head is turned, and in which the aural caloric reactions are normal, is characteristic of certain cases of cerebellar abscess and is never the result of a lesion limited to the labyrinth. Seldom is operative interference necessary in these cases. Absolute rest and quiet in bed are the prime desiderata in all such cases.

The second or paralytic type of vestibular vertigo is called by Kerrison the vertigo of defective orientation. The patient who has passed the stage of vestibular irritation may be at perfect rest as he lies in bed, but any change of position, as for instance sitting up or rising, results in a sudden and transient vertigo. This recurs with each change of position to which the patient has not reaccustomed himself. To cure the condition it is only necessary that progressive graded movements be used to reeducate the sense of spatial orientation.

The term "Menière's disease" includes various forms of auditory vertigo associated with tinnitus and nausea, and always due to organic labyrinthine disease. Charcot's plan of giving quinin in increasing doses to cinchonism is recommended in this type. Sodium salicylate has been substituted for the quinin with reputed good effect. The multiplicity of drugs recommended is the best commentary on the difficulty of managing all cases alike.

6. *Ocular Vertigoes.*—These arise from imperfect refraction or from a disorder of the ocular muscles. They are much less common than aurai and reflex vertigoes. Correction of the astigmatism or asthenopia gives relief.

There are various diseases of which vertigo is a symptom but in which no occasion arises for singling it out from other symptoms for special treatment. The so-called mechanical vertigoes, such as are associated with sea-sickness, car-sickness, and the rapid motion of an elevator or swing, are easily reduced to their component aural and ocular elements.

TREATMENT WHEN CAUSE IS NOT APPARENT

When it is not soon apparent what the underlying cause of a vertigo may be, or when a reflex vertigo has been diagnosed, treatment should be instituted to relieve the immediate dizziness and its accompanying symptoms. In these cases a vigorous purgative should be given at once, either a teaspoonful of sodium phosphate or twice the quantity of sodii phosphas effervescens U. S. P. Instead of this, 1/10 grain doses of calomel may be given at ten-minute intervals until a grain or more has been taken. The patient should lie down. Amyl nitrite, weak ammonia, smelling-salts or some other volatile stimulant may be of immediate service. For internal administration probably sodium bromid in twenty-grain doses three times daily is most satisfactory. It is well to apply a mustard paper or plaster to the back of the neck, and the extremities must be kept warm by rubbing, and counter-irritation with a weak mustard bath or hot water bags outside of blankets. Occasionally counter-irritation of the mastoid region with a cautery is useful.

SUMMARY

To repeat, vertigo is a symptom. Ordinarily its treatment is bound up with the treatment of its cause, and while engaged in relieving it the physician must not forget its diagnostic significance.

358 West Twenty-Ninth Street.

A NEW DIFFERENTIAL LEUKOCYTE COUNT CHART

W. H. WATTERS, A.M., M.D.

Director of Department of Pathology and Bacteriology, Evans Memorial for Clinical Research

BOSTON

In the earlier days of hematology it was supposed that the leukocyte count was a quite reliable guide to the extent, progress and severity of various infections. It was shortly recognized, however, that other factors entered into the problem and that the degree of leukocytosis was more of an index of the amount of resistance, the fighting force possessed by the body, than of the virulence of the infection or of the actual progress of the combat between the invading bacteria and the natural resisting powers of the organism. Thus a normal leukocyte count or slight leukocytosis might mean little or no infection with no need of great resisting force or, on the contrary, it might be indicative of a very severe infection by which the body was overwhelmed without even a chance of combating it.

Some other additional index was needed to complement this early one. Such an index was found in the differential count, in which the percentage of the neutrophils or polynuclears was determined. At present we say in a somewhat loose way that the degree of leukocytosis is indicative of the amount of resistance put forth by the body and the percentage of neutrophils an indication of the virulence of the infection. Accordingly when we make a leukocyte and a differential count we can obtain information concerning both opposing forces.

Determination of these two factors and their deviation from normal is often of vital importance in adequately studying our cases. Unfortunately this normal is not by any means a fixed factor, the normal neutrophil percentage varying much with the degree of leukocytosis. This latter fact has been noted by all hemat-

clogists and has been well brought forward by Gibson who, in an article a few years ago, suggested a chart for tabular representation. According to that, the normal leukocyte count is placed at 10,000 and the normal neutrophil percentage at 75. Then, in a general way, he says the neutrophilic percentage should increase one for every thousand extra leukocytes if the proper proportions are maintained. Thus if the leukocyte count

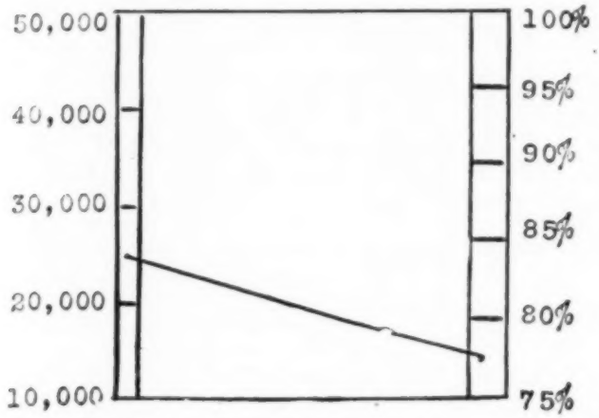

Chart 1.—Line descending—indications favorable. A mild case of infection with good resistance.

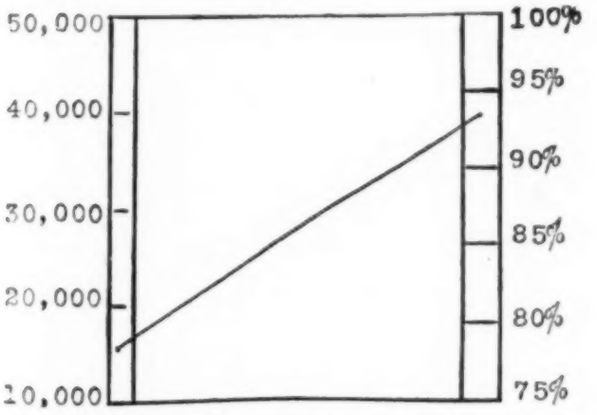

Chart 2.—Line ascending; indications unfavorable. A severe infection with rather poor resistance.

is 20,000 the normal neutrophil percentage should be 85; if it is 30,000 the neutrophil percentage should be 95 and so on.

If the neutrophils are present in greater abundance the prognosis is less satisfactory than if they are less so, and the greater the divergence the more serious becomes the prognosis. A chart was devised whereby the leukocyte count was placed on the left side and the corresponding neutrophil count on a level on the opposite one. The actual count in a given case was then plotted and the two points united by a straight line. If this line was horizontal or descending the prognosis was good, if ascending, particularly sharply so, it was more serious. The ideas advanced by Gibson were certainly valuable, as they gave a definite plan on which to work, rather than a previous rather vague impression of the same facts. I have tested them extensively during the last few years and have found them very useful. Certain modifications have seemed advisable and have been used with satisfaction for a considerable time. In order to explain them better the accompanying charts have been prepared. In Gibson's chart the weakness lies in the fact, it seems to me, that if the leukocyte count goes above 35,000 the neutrophils are above 100 per cent. The preferable way appeared to be to take out the extreme limits of the leukocyte count and of the differential count and then to divide the intervening spaces proportionately. This has been done in Charts 1 and 2.

It may be assumed that I am not speaking of any count of less than 10,000 as a leukocytosis, also that in adults the leukocyte count seldom exceeds 50,000. For a count of 10,000 a neutrophil percentage of 75 will be admitted to be about normal in adults. Equal spaces are accordingly given to each and the distances are divided proportionately. The leukocyte count is marked on the left, the neutrophil percentage on the right and the two points are united by a straight line. Just as with Gibson's original chart, a level or a descending line warrants decreasing anxiety while an ascending one serves as a danger-signal. This chart for single counts proves satisfactory but very frequently one desires to watch the progress of the disease from day to day and from this less satisfaction is noted. In such cases Chart 3 is employed. Here the leukocyte count is indicated by a solid line, the neutrophil percentage by a broken one, both charted in the same vertical plane. When the solid line is above the broken one or at least

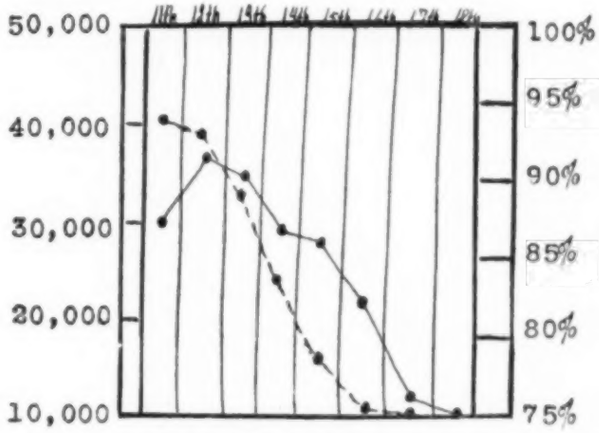

Chart 3.—Indications unfavorable on the 11th but gradually improving thereafter. A septic arm with operation and recovery.

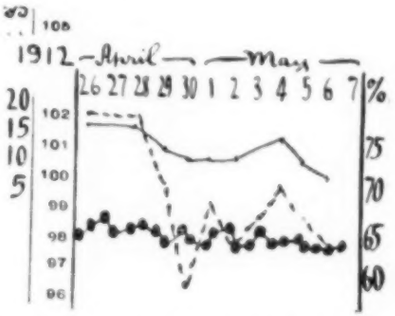

Chart 4.—Line with heavy dots, temperature curve; line with light dots, leukocyte curve; line composed of dashes, neutrophil curve. The first column of figures on the left shows leukocytes in thousands; in the second column shows temperatures.

on a level with it, the indications are that all is progressing well in the combat. If it falls below the broken one, however, it is equivalent to a call from Nature for more assistance, as the invaders are prevailing. A further modification of this chart is its transfer to a temperature chart in order to have in tabular form

the daily variations in all lines possible as shown in Chart 4.

The use of these charts has proved very satisfactory to me both from the standpoint of diagnosis and from that of prognosis. It is not maintained that they are by any means perfect; they will undoubtedly be improved as time advances. They are, however, the best means of tabulating these figures within my knowledge, and are here given publicity in the hope that they may be of some benefit to others.

80 East Concord Street.

LARYNGEAL TUBERCULOSIS*

ROBERT LEVY, M.D.
DENVER

It is a pleasing commentary on the medical profession that however great the obstacles which confront it, and however baffling the solution of difficult problems, its efforts remain persistent. Were it not for this untiring patience many a discovery which has brought credit on our profession and inestimable good to humanity would still be unknown. It is no wonder, therefore, that tuberculosis is a constant source of interest and study, engaging the attention of scientists, practitioners and laymen with a grip that no amount of discouragement can lessen; nor is it remarkable that one of the complications of this disease which adds so much to the suffering of the sick should be no less interesting to the general practitioner than to the specialist, even though its treatment has been largely relegated to the sphere of the laryngologist.

Despite this union of general and special interest it must be admitted that the text-books on general medicine are prone to ignore many of the most important questions relating to the laryngeal complication of tuberculosis, passing too lightly over the remarkable change in our understanding of this disease, while special text-books dealing with diseases of the upper air-passages are equally negligent in overlooking the close relation between the general or pulmonary disease and its most frequent complication.

It must be borne in mind that the internist and the laryngologist are so closely related that the questions of diagnosis, prognosis and treatment depend on their combined efforts. The laryngologist becomes a valuable guide especially in early diagnosis and in accurate prognosis, and were he to examine the larynx of every patient with tuberculosis, his usefulness would doubtless be increased by his detection of tuberculous infiltration which passes unnoticed until the patient is beyond hope.

The importance of such examination is clearly reflected in the action taken at the last annual meeting of the Association of German Laryngologists,[1] in which it was urged that in all hospitals devoted to the combating of tuberculosis, the condition of the upper air-passages should receive special attention. This thought is further emphasized in my mind by a practical experience of many years in a section of the country to which tuberculous patients have looked with a hope born of such despair as only the verdict of the family doctor's diagnosis can inspire. Innumerable patients have been ordered away from home in whom the laryngeal involvement pointed to a hopeless future, while quite as many have been deprived of the benefits of change of climate because, in the absence of proper laryngeal examination, an early diagnosis was not established.

FREQUENCY

It is doubtful whether any of us realize the frequency with which this disease occurs, and it is only since we have learned to recognize early manifestations that we have fully appreciated its importance. Killian[2], in one of the latest articles on laryngeal tuberculosis, speaks of its latent form and states that in order not to be surprised we must look with suspicion on the larynx of every tuberculous patient having bacillus-laden sputum. Comparing statistics of twenty years ago with those of to-day we can hardly believe that they are acurate. It was generally conceded then that 30 per cent. of all cases of tuberculosis were laryngeal. Today, St. Clair Thomson[3] states that post-mortem findings show laryngeal involvement in 50 per cent. of those who die from tuberculosis and 72 per cent. as the frequency of its occurrence in third-stage cases.

It is unfair, however, to conclude that there has been an actual increase in the frequency of this affection. The higher percentage must be attributed to more careful examination and to our ability to recognize the lesion in its earliest stages. Were statistics available, I believe it could be shown that the apparent increase in frequency is confined to early-stage cases and that fewer late-stage cases exist than formerly. My own experience and that of several of my confrères bear out this statement. Its explanation is simple enough. Tuberculosis in general as well as that with laryngeal involvement is not only recognized earlier than formerly, but its treatment is resulting in more cures, more cases of arrest and consequently fewer late complications. In this connection it is interesting to read the statistics of the Japanese investigators, Harada and Yamoguchi[4]. These observers found tuberculosis of the upper air-passages in 16 per cent. of 42,431 throat and nose patients and in 6 per cent. of the necropsies of 2,162 individuals who died of tuberculosis. It is generally understood that tuberculosis is not uncommon among the Japanese.

Tuberculosis of the larynx in children, especially in very young children, is comparatively rare. Its frequency increases after the age of 12. Bonney of Denver in a personal communication reports a series of sixty-eight cases of pulmonary tuberculosis in children, in twenty of which there was laryngeal involvement. The average age of the twenty was approximately 15 years, the youngest child being 10 years of age. Nobécourt and Tixier[5] report the case of a child aged 3½ months in whom laryngeal ulceration, tuberculous in character, was disclosed post mortem, while Collet[6] found only four cases of tuberculosis in a thousand children of all ages.

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* Read at the regular meeting of the St. Louis Medical Society, Feb. 22, 1913.

1. Campaign Against Tuberculosis of the Upper Air-Passages, Berlin Letter, THE JOURNAL A. M. A., Jan. 18, 1913, p. 221.
2. Killian, G.: Laryngeal Tuberculosis, Deutsch. med. Wchnschr., May 28, 1912.
3. Thomson, St. Clair: Practitioner, London, January, 1913, p. 243.
4. Harada and Yamoguchi: Centralbl. f. Laryngol. u. Rhinol. Dec. 12, 1912, p. 666.
5. Nobécourt and Tixier: Cited in The Practical Medicine Series, 1911, p. 326.
6. Collet, M.: Laryngeal Tuberculosis in Children, Lyon méd., Oct. 27, 1912, p. 677.

It is still believed by many that laryngeal tuberculosis is usually associated with advanced pulmonary tuberculosis (Osler[7]), and that the laryngeal lesion is only a local expression of the pulmonary involvement. Klebs[8] states that the earliest tuberculous manifestation is not usually coincident with incipient pulmonary lesions but with moderately advanced ones. Were every case in which the suspicion of tuberculous disease exists examined with sufficient care, laryngeal signs that are now overlooked would frequently be detected.

EARLY MANIFESTATIONS AND DIAGNOSIS

Among the earliest signs we find slight intermittent hoarseness. This disturbance in the voice is due to one of several causes. It may be a simple weakness in the motility of the vocal bands due to anemia which, though a general manifestation of the general infection, is more prominent in the mucous membrane of the pharynx and larynx. This local expression of a general anemia is one of the signs that has always been looked on as extremely suggestive. It is followed in many early cases by a unilateral lesion associated with increased lameness on that side with or without slight redness and moderate swelling. The unilateral manifestation of early laryngeal tuberculosis is one of its most distinctive characteristics. It has been found that the lesion, in the majority of instances, is on the same side as the lung affection. Krieg[9] asserts that this is true in 92 per cent. of the cases, while Shaeffer[10] found early unilateral paresis on the same side as the lung lesion in 67 per cent. of the cases.

The explanation of this is not difficult, although there are numerous theories, any one of which is tenable. For instance, Jouty[11] believes that owing to the tuberculous lesion there is a trophic inferiority of the one side as compared with the other existing before it is possible to discover any laryngeal or pulmonary lesion. It is a recognized fact that the apex of the lung is the earliest site involved, and Cornet[12] states that the unilateral lesion in the larynx may be due to pressure of early apical trouble on the recurrent laryngeal nerve, or to enlarged bronchial lymph-nodes on the same side. Lake[13] believes the paresis to be due to a tuberculous myositis. Given a unilateral debility from nerve and muscular weakness, it is easy to understand the development of subsequent typical tuberculous changes on one side, this side being unable to cleanse itself of tubercle-laden sputum.

It is conceded that one of the most frequent of the recognized modes of infection is that by which a vulnerable mucous membrane takes on local infection. In certain cases of tuberculosis of the mouth, for instance, the local lesion can be directly traced to traumatism such as a rough tooth or a tooth extracted. The same vulnerability exists in a large majority of all tuberculous throats because of the existence of more or less chronic catarrhal pharyngitis and laryngitis. The mucous membrane in these cases loses much of its resistance to infection, and this resistance is still further lowered by the traumatism produced by every act of coughing. Coughing, however, is a salutary effort on the part of Nature to clear the laryngeal mucous membrane of accumulated secretions. Given a larynx one side of which is weak from whatever cause, bacilli-laden sputum remains more constantly in contact with this side than with the other. The sputal theory of unequal localization is therefore easily established.

A suggestive early symptom is excessive sensitiveness and irritability of the pharynx. Many persons resist by an act of retching even the use of the tongue-depressor, to say nothing of the laryngoscopic mirror. The irritability is markedly increased in a large proportion of tuberculous cases and, if it exists in connection with pallor, slight fever and hacking cough, it should be seriously considered.

Pain as a symptom has uncertain significance. It may mean a great deal and it may mean nothing. Being a purely subjective manifestation, its character necessarily differs according to personal equation. It is present as a rule in ulcerations, although these may exist without pain. Sensations described as discomfort by some and actual pain by others may be present without ulceration and without tuberculous lesions of any description. The common condition of dryness due to defective secretion as seen in the dry skin and the dry hair of the tuberculous patient has its analogue in a dryness of the mucous membrane of the pharynx and larynx which induces painful sensations more or less constant but particularly marked at night.

During the act of swallowing this sensation may be materially exaggerated, but an important distinctive point is found in the fact that the pain is most marked during an attempt at swallowing at other than the time of taking food. It is also complained of during the first part of the meal; but instead of being increased by the taking of food it is relieved thereby, completely disappearing in a few moments.

The onset of tubercle deposit in the submucous tissue, even without definite tuberculous ulceration, is frequently marked by early pain, and shows itself on physical examination as a circumscribed pale edematous swelling with small grayish or yellowish pin-point elevations distinctly appearing beneath the mucosa, and embedded in it. The pain in this instance is not relieved by the act of swallowing, although it may be diminished, because dryness at all times must be looked on as an exciting cause irrespective of tuberculous deposits. When, however, these deposits exist at the same time as the dryness the pain continues as long as any irritation is applied to them. The excruciating pain of more advanced tuberculous laryngitis is due, of course, to extensive ulceration, and has always been considered one of the characteristic differential points in determining the presence of this disease. It is unquestionably a valuable symptom in the diagnosis, but it should not be taken as pathognomonic. Ulcerations of extensive character may exist on the interior of the larynx and cause practically no pain. Moreover, there are many pathologic changes other than ulcerative which are typical of laryngeal tuberculosis, and in which pain is entirely absent.

As already seen, it is not my purpose to discuss the diagnosis of this disease when it is well established, but rather to impress certain typical features of early symptoms in order that an early diagnosis may be possible.

The use of tuberculin as a diagnostic aid is extolled by some, notably von Ruck,[14] who states that many

7. Osler, W.: Modern Medicine, 1907, III, 632.
8. Klebs: Tuberculosis, 1909, p. 200.
9. Krieg: In Edwards' Principles and Practice, 1907, p. 354.
10. Shaeffer: Quoted by Cornet in Nothnagel's Encyclopedia of Practical Medicine, 1907, article on Tuberculosis.
11. Jouty: Jour. Laryngol., Rhinol. and Otol., September, 1911, p. 491.
12. Cornet: See Footnote 10.
13. Lake: Laryngeal Phthisis, 1901, p. 17.
14. Von Ruck, S.: Prognosis of Tuberculosis of Larynx, New York Med. Jour., Aug. 17, 1912, p. 321.

cases show characteristic evidence of focal reaction to tuberculin preparations. Unquestionably this is true, but only to a certain extent, and should not be made the sole test.

The finding of tubercle bacilli in the sputum is confirmatory evidence of tuberculosis, but the question of differentiating the locality from which this sputum was derived throws the question of local tuberculosis open. In many early cases no cough or expectoration exists, and therefore sputum examination is impossible. Much light, however, may be thrown on the situation by carefully rubbing the suspected larynx with a firm pledget of cotton and subjecting this to bacteriologic scrutiny. I have frequently been rewarded by finding tubercle bacilli by this method.

A common error is made by the general practitioner in believing a case to be one of laryngeal tuberculosis because of the presence of intermittent or constant hoarseness coming on during the course of a pulmonary infection. The most frequent cause of this error is the coincident development of laryngitis sicca. In these cases the hoarseness may be extreme, and with it at times is associated some laryngeal obstruction. It often occurs in advanced cases at a time when laryngeal tuberculosis may be expected. The uniform redness and the presence of small scales of dry secretion in the larynx clear up the diagnosis.

The development of sudden aphonia following a pulmonary hemorrhage is also suggestive of the onset of the laryngeal complication, but one should not be led into error by a snap-shot judgment in this case, for I have frequently seen this sequence of events due to a sudden pronounced bronchial lymph-node infection producing such marked pressure on the recurrent laryngeal nerve as to cause complete fixation of one lateral half of the larynx. Should this occur in a very early stage of tuberculosis before the pulmonary lesion has been detected, it would have a bearing on the general diagnosis. Occurring after the pulmonary lesion has been well defined, it by no means indicates tuberculous laryngeal invasion.

During the course of pulmonary tuberculosis and while the patient is progressing favorably in every respect, the sudden development of hoarseness, increase in general symptoms, and return of the afternoon fever frequently suggest a new focus of trouble, and the natural supposition is that the larynx is the responsible structure. This is quite frequently an erroneous conclusion. Constitutional symptoms are more frequently due to new foci in the lungs, or to gastrointestinal disturbances, than to laryngeal invasion. Such symptoms can be ascribed to the larynx only when objective examination shows this organ to be involved in the most intense acute manifestation. Hoarseness due to moderate redness, swelling or infiltration may mean laryngeal tuberculosis, but it is not necessarily the cause of serious constitutional symptoms.

PROGNOSIS

Of all the questions concerning this disease, that of prognosis must possess the greatest significance. To know whether or not a disease is curable, how much may be expected from treatment, or how far spontaneous cure may be anticipated, affects all investigation and all problems of practical application. Without the encouraging hope of a favorable result, how little is the stimulus to original research! The encouragement given to the early investigators in general as well as local tuberculosis came from the reports of spontaneous cures.

The last twenty-five years and especially the last ten years have brought about a cheerfulness in our view of this affection which cannot be subdued by the most pessimistic. It has been a hard fight. It is still an up-hill effort, and were it not for the failure on the part of general text-books to recognize the curability of laryngeal tuberculosis, the way would be easy and more lives would be saved or at least made comfortable. Unfortunately we still see such statements as these: "The prognosis is not only bad in all cases, but when it develops as a complication of the pulmonary disease it adds an element of great danger to the previous condition."[15] No word of hope, none but of despair!

On the other hand, too great an optimism or the report of cures that must be open to question is bound to be so reactionary that discouragement becomes the greater. When we read that only mild and gentle measures cure a large percentage of early and a fair percentage of advanced cases,[16] we know that this is not borne out by the experience of many men. Our disappointment becomes so great that a return to a hopeless inaction is the result. The conservative but hopeful view is the only one which will serve to overcome the prejudice of the ages against the curability of this affection. Every case of cure, whether by spontaneous healing, by climatic influence or by judicious local treatment should be placed on record. All cases of failure should also be recorded, with an outline of the cause for such failure. In this way the extreme optimism of the enthusiastic specialist will be curbed, while the inherent pessimism of the general practitioner who has seen only the worst cases will at least be restricted.

The percentage of cures has been variously estimated by different authors, but it is almost impossible to generalize, for much depends on individual peculiarities. I know of no disease into the prognosis of which so many items enter as into that of laryngeal tuberculosis. The stage of the affection, the nature of the lesion, the situation of the lesion, the complications, the associated general or pulmonary involvement, the environment of the patient, his social position—all and more must enter into a consideration of the possible termination. Were we to study only the prognosis of early cases, the disease would no longer be one to be dreaded; on the other hand, were our statistics to be derived exclusively from late-stage cases, no hope would encourage us. A fair percentage of cures is given by Brüll,[17] who found that 58 per cent. of the patients were clinically cured when they left the sanatorium, and that of these 31 per cent. remained cured. The latter probably more nearly represents a reasonable estimate of curability in all cases.

Schroeder[18] reports 170 deaths of patients suffering from laryngeal and pulmonary tuberculosis, in only seven of whom the larynx could be held as the cause. Among his cured patients we find 30 per cent. men and 26 per cent. women. This agrees with the findings of the majority of writers, who find that although laryngeal tuberculosis is more common in the male sex,

15. French: Practice of Medicine, 1907, p. 390.
16. Pottenger: Pulmonary Tuberculosis, 1908, p. 243.
17. Brüll, L.: Curability of Laryngeal Tuberculosis, Beitr. z. klin. d. Tuberk., xxiii, No. 1; abstr., THE JOURNAL A. M. A., July 13, 1912, p. 151.
18. Schroeder: Cited in Centralbl. Laryngol. u. Rhinol., June, 1912, p. 323.

it is more fatal in the female. This must in a great measure be attributed to the occurrence of pregnancy, which Kuttner,[19] Freudenthal[20] and others have shown is one of the most serious complications that may arise in the course of tuberculosis. There is much discussion as to the induction of abortion in pregnant tuberculous women, the mooted question being with regard to the extent of the tuberculous involvement. Undoubtedly much individualization is necessary in arriving at a conclusion, but there can be little question as to the rapid progress of laryngeal tuberculosis in pregnant women, especially immediately following delivery. Therefore in cases presenting definite tuberculous lesion of the larynx, we should have no hesitancy in recommending artificial delivery.

The prognosis of laryngeal tuberculosis must be considered from two points of view, that relating to its influence on the general condition and to a possible fatal termination, and that relating to its effect on the voice. Generally speaking, the advent of laryngeal complication adds to the gravity of the prognosis. This statement applies only to those cases in which the nature of the complication is of the rapidly active type with marked edematous swelling and abundant deposits of tubercles. The seriousness of its effect on the general outcome increases with the lateness in the stage of the general disease in which it develops. In that form of laryngeal tuberculosis in which there is little or no tendency to ulceration, the form characterized by more or less firm infiltration, the progress of the general disease is not materially affected. Unquestionably the local and the pulmonary or general infection progress favorably or unfavorably one with the other, but on the whole the general infection is much more responsible for a failure to obtain laryngeal improvement than is the local affection for the general or pulmonary condition. On the other hand, the latter often improves in proportion to the favorable progress made in the larynx. This is especially true in those cases in which local treatment overcomes odynophagia, thus enabling the patient to take food. Freudenthal[21] says, "The curability of tuberculosis of the lungs depends very much on the cure of the laryngeal condition." While this may be rather a strong statement, it nevertheless possesses a large element of truth.

No one has more clearly outlined the character of cases in which a good or bad prognosis may be given than Heryng,[22] who states that the possibility of a cure is above all dependent on the constitution and resistance of the patient, together with the anatomic character of the pulmonary affection and its extent, the age, occupation and financial status of the patient and the period in which the proper treatment is begun. In addition to this a good prognosis so far as life is concerned may be assured in the infiltrative type and in those of the ulcerative variety in which the lesions are sluggish in character and situated on the interior or more protected portions of the larynx.

The prognosis as regards the restoration of the vocal function is of great importance. The mental distress occasioned by the loss of voice can be appreciated only by those who have suffered a similar affliction and, although it must be looked on as of less actual importance than the general systemic disturbances, its gravity should not be underestimated. Unfortunately, in few cases in which complete loss of voice has occurred can it be restored to perfectly normal function; nevertheless a large proportion of voices can be restored to usefulness. Even in those cases in which extensive destruction of one vocal band has resulted or marked infiltration has been present, the patient may be rescued from a voiceless future. The cases offering the least hope in this particular are those in which the arytenoids and the interarytenoid space undergo extensive fibroid hypertrophy associated with perichondritis which invades the crico-arytenoid articulation.

19. Kuttner: Arch. f. Laryngol., xii.
20. Freudenthal: Laryngoscope, July, 1912, p. 273.
21. Freudenthal, W. Prognosis and Treatment of Tuberculosis of Larynx, Laryngoscope, July, 1912, p. 971.
22. Heryng: Ann. Otol., Rhinol. and Laryngol., 1908, p. 1003.

TREATMENT

It is not my intention in this paper to discuss individual or special lines of treatment any more at length than I have the pathology, symptomatology and prognosis of tuberculosis of the larynx. A consideration of the history of this disease shows how closely its curability, its treatment and in fact all large questions relating to it are bound together. We have already seen that the curability of the disease is largely dependent on an early diagnosis, which until comparatively recent years was the subject of but little consideration. Those cases which were in advanced stages and those complicated by extensive pulmonary tuberculosis were the only ones to which attention was directed. For many years local palliative measures in conjunction with general, dietetic, hygienic and climatic measures were the only ones recognized. Surgical intervention was, in fact, the first method of treatment which was directed with a definite purpose toward the cure of this affection.

Voltolini[23] in 1867 reported the case of a man, aged 54, suffering from advanced tuberculosis, whose larynx was filled with excrescences and covered with ulcerations. This case was treated by galvanocautery until the entrance to the larynx was freed. The deeper portions of the larynx were then seen to be filled with infiltration to such an extent that Voltolini was completely discouraged, and discontinued treatment, leaving the patient to his fate. This form of surgical treatment seems to have received but little attention and still less encouragement. In fact, Gottstein, in 1893, condemned the treatment on the ground that it might increase the trouble by producing postoperative edema. Other men, notably Schech, Gleitsmann, Schmiegelow and Serebrny, recommended this treatment more or less enthusiastically, but it was not until Ludwig Grünwald in 1907 published his monograph entitled, "Die Therapie der Kehlkopftuberculose mit besonderer Rücksicht auf den galvanokaustischen Tiefenstich und Aussere Eingriffe," that the galvanocautery received its just consideration.

The next surgical procedure was incision and scarification, advocated in 1880 by Moritz Schmidt of Frankfort. This operation was performed by knife or scissors, and consisted in incising the posterior wall and arytenoids in cases of dyspnea or dysphagia due to tuberculous edema or infiltration.

Submucous injection was first recommended by Major of Montreal in 1886. He injected 5 drops of a 30 per cent. solution of lactic acid into the infiltration of the aryepiglottic fold and in diffuse swelling of the epiglottis. Later Heryng injected iodoform emulsion, while other authors advised a variety of remedies. Chappell of New York described a special syringe which made it possible to inject with greater accuracy the remedy desired. He recommended solutions of creosote.

23. Voltolini: Die Anwendung der Galvanokaustik, 1867.

In 1886 Heryng of Warsaw promulgated a form of treatment which may be said to be more distinctly surgical than any method previously suggested. The idea of active surgical intervention more or less radical in character appears to have been the culmination of a gradual change of view from the former mild or entirely passive treatment in vogue. In 1879 Robinson wrote that he believed that all "caustic substances are radically wrong when applied to the ulcerated laryngeal surfaces of phthisis." Heryng's brilliant results were not confirmed by other observers; nevertheless, the surgical treatment recommended by him was on purely scientific principles, and therefore the removal of tuberculous masses by excision and the stimulation of tuberculous ulcers by curettement has been adopted as a recognized form of treatment. Krause of Berlin in 1887, Goughenheim of Paris in 1887, Gleitsmann of New York and numerous other reliable authorities have added their testimony to its value. The true status of the surgical treatment of tuberculosis is between the extremely radical measures first advocated by Heryng and others, and the extremely conservative method representing the relic of the early writers. Its true position has been more clearly defined by recognizing the fact that certain cases offer definite contra-indications, while others present ideal indications for surgical interference.

During the past few years there seems to have been no actual innovation or true advance in treatment. These years, however, have not been without great value, for they have been devoted to an adjustment of various methods previously recommended, to a separation of the good from the bad and to a more definite understanding of the indications for and the real value of each. Apparently the consensus of opinion in modern literature is strongly voiced in support of the following:

1. Treatment by means of rest to the vocal organ in conjunction with rest and general hygienic measures.
2. Local measures, modifications of surgical procedures. Among these the use of the galvanocautery seems to have at the present time the most advocates.
3. The relief of pain by injection or section of the superior laryngeal nerve.
4. The use of tuberculin

REST AND OTHER CONSIDERATIONS

Too much emphasis cannot be laid on the necessity of complete vocal rest. While this is apparently a simple method of treatment, it will be found one of the most difficult to carry out satisfactorily. It should be insisted on in all cases and in all stages. Its beneficial effect is particularly gratifying in the early cases, namely, those in which unilateral redness or moderate infiltration is found. The ulcerative cases, especially when not too far advanced, are also remarkably benefited, and it was because of the recognition of this principle that Moritz Schmidt so many years ago advocated tracheotomy. The patient should be instructed to express all of his desires in writing. When this cannot be carried out satisfactorily whispering is permitted; but the whisper should be produced in the mouth and not in the throat.

Besides local rest, much attention should be paid to general treatment, and although local measures must constitute a large element in the treatment of this affection, harm frequently results from insisting on the exertion necessary for the patient to keep appointments at the office. In other words, local treatment must give way in many instances to general treatment, especially when fever, rapid pulse, excessive cough and general depression point to the necessity of avoiding physical exertion. The establishment of sanatoriums has been of inestimable value in the treatment of general tuberculosis, and will be of similar worth in the management of laryngeal cases as soon as it is generally acknowledged that these cases should not be excluded from these institutions.

Recently the full importance of establishing through normal nasal respiration a more healthy condition of the upper air-passages has been recognized. At the meeting of the British Medical Association[24] in 1911 this was particularly impressed on us by such men as Watson Williams, Dundas Grant and others. In 1891 I stated my belief[25] in the importance of establishing a satisfactory hygiene of the upper air-passages, and made the following statement: "That every patient with phthisis shall breathe properly through the nose is of paramount importance in preventing a chronic catarrhal laryngitis which, having once obtained, furnishes good soil for the development of tuberculous laryngeal complication." One should not hesitate to free the nose of all obstructive lesions, and tuberculosis, instead of being a contra-indication to such operations as septal resection, is rather an indication for such an operation, except in very advanced cases.

Climatic treatment should also enter into a consideration of general measures and, notwithstanding the opinion of excellent English authorities to the contrary,[24] high altitudes and rarefied air do not increase the laryngeal complication or its severity. It is a recognized fact that dry and rare atmospheres have an excess of sunshiny days during which the patient can remain out of doors. It is not denied that the outdoor treatment has been the one great factor in the cure of tuberculosis. Humid, cloudy days are depressing and produce their injurious effects on tuberculosis in general. It must therefore be conceded, if we acknowledge the close relation between pulmonary and laryngeal tuberculosis, that whatever climate affects injuriously the pulmonary infection reacts injuriously on the laryngeal complication. The converse must naturally follow.

All of the means used in treating the general disease must enter into the management of the local affection and nothing be left undone that may improve the patient's general well-being. Fresh air, an abundance of sunshine and rest, and a maximum of nutritious food are the cardinal principles that must guide us in general treatment.

In order to enable a patient to take a maximum of food it becomes necessary to relieve dysphagia and odynophagia, and for this purpose, if for no other, local treatment becomes absolutely essential. It is remarkable what a variety of opinion one can obtain with regard to the benefits to be derived from local measures. One can find good authority for ignoring entirely the local lesion as well as for the most heroic topical measures. All degrees of activity between these two extremes will be found advocated by reputable men. Edwards,[26] who may be considered the mouthpiece of the general practitioner, states that local measures do not modify the process, that caustics do more harm than good, and that treatment is unsatisfactory. Hett[27] is a strong advocate of surgical treatment in all cases, even the most

24. Tr. Brit. Med. Assn., July, 1911.
25. Levy: Treatment of Laryngeal Phthisis, Tr. Colorado State Med. Soc., 1901.
26. Edwards: Practice 1907, p. 355.
27. Grant, D., Williams, P. W., and Hett, G. S.: Treatment of Tuberculosis of Larynx, Jour. Laryngol., Rhinol. and Otol., November, 1911, xxvi, No. 2.

advanced. Freudenthal,[28] Hutter,[29] von Navratil,[30] and many others express their approval of more or less strenuous local measures, but temper their statements with great conservatism. The opinion of Horne[31] may serve as a guiding principle; he states that the rational treatment is to preserve the mucous membrane covering the larynx and to induce a metaplasia of the columna mucosa into the squamous variety—that is, to induce a condition of pachydermia laryngis. He further states that this is the natural process of arrest and that it can be induced and imitated by absolute rest to the voice and the submucous puncture with a galvanocautery point.

Among the local curative as well as palliative measures none has been so highly praised within the last few years as the galvanocautery, and, although it is still unrecognized by many, it must be accepted at present as one of the most satisfying. De Reynier[32] believes it to be the only surgical procedure of any value. Others are nearly if not quite as enthusiastic. The galvanocautery may be used in all forms of the disease. Superficial ulcerations readily heal under its action, while edematous infiltrative swellings frequently shrink to comparatively small size. If the experiments of Wood[33] are accepted, its value will be beyond that of anything else which we have at our command. Wood states that he has no doubt that a retarding influence is exerted beyond the area actually destroyed by the heat, and his histologic studies bear out this assumption.

More heroic surgical intervention may be carried out with benefit in many cases, particularly in those in which the infiltrations are circumscribed and soft, and thus are easily extirpated by double curet or cutting forceps, as well as in deep ulcers of sluggish character that may be stimulated into healthy activity by thorough curettage. The extirpation of infiltrated masses or the amputation of the epiglottis depends largely on the extent of the lesion and its limitations. Even though the entire tuberculous involvement cannot be removed by amputation of the epiglottis or excision of circumscribed swellings, the result of such operations has been frequently gratifying, especially as palliative measures, as shown by Lockard[34] of Denver.

Relief of the intense suffering must be considered as one of the most important indications for treatment. While local applications of anesthetic and analgesic remedies afford some relief, they have never been very satisfactory. It is no wonder, therefore, that the laryngologic world has accepted almost as a unit the blocking or section of the sensitive nerve of the larynx, namely, the superior laryngeal branch of the pneumogastric. Without entering into a detailed discussion of this method of treatment, I should like to say that it is comparatively easy of performance and that the relief is marked in a large majority of cases. Failure occasionally results, but if the nerves on both sides are attacked, the patient will derive sufficient comfort lasting from one to three weeks to urge a repetition of the procedure. The injection of alcohol into the nerve seems to be the most generally accepted procedure. Cocain, stovain and other remedies have been less acceptable. The method of injection has been described by Frey, Hoffman and others. The great advantages to be derived from this remedial agent are concisely laid down by Boulay,[35] who states that three results are accomplished:

1. It relieves pain.

2. It prevents pain for the performance of intralaryngeal operations such as cauterization, etc.

3. It favors cure by allowing the patient to take food and by increasing his hopefulness.

The use of tuberculin in laryngeal as well as in general tuberculosis has for many years been a mooted question. I am satisfied that it is of value in many instances, especially as advocated by Meyer,[36] when combined with surgical measures. Blumenfeld[37] believes that it is of value, but that it should be used only in bad cases. Wilkinson[38] recommends it most strongly in all cases, and uses it to the exclusion of other remedies. Whatever view we take of its use, we can safely say that its application is desirable as an adjunct to local treatment, but that its administration must be carefully conducted. It should not be administered indiscriminately, especially when pulmonary activity is great. Selected cases that can be watched properly, preferably in sanatoriums, respond most satisfactorily.

As to the more extensive external surgical procedures such as tracheotomy, laryngofissure and laryngectomy, the work of Gluck and Sorensen[39] of Berlin stands out as the most prominent. Few as yet have had the temerity to follow in the footsteps of the surgeons, who radically extirpate the entire larynx for the relief of this affection. It is remarkable that Gluck has had the results reported, but even his success cannot make these procedures find favor with the profession at large. At any rate, so long as success has attended simpler measures, and so long as this success is rapidly increasing the number of cures, extensive, life-endangering operations must be condemned.

Metropolitan Building.

28. Freudenthal: Practical Medicine Series, 1911, p. 326.
29. Hutter: Wien. klin. Wchnschr., Feb. 3, 1910.
30. Von Navratil: Cited in Centralbl. f. Laryngol. u. Rhinol., March, 1912, p. 156.
31. Horne: Jour. Laryngol., Rhinol. and Otol., November, 1911, p. 601.
32. De Reynier: Cited in Centralbl. f. Laryngol. u. Rhinol., November, 1912, p. 593.
33. Wood: Tr. Am. Laryngol. Assn., 1911, p. 184.
34. Lockard: Tr. Am. Laryngol. Assn., 1911, p. 29.
35. Boulay: Presse méd., Jan. 28, 1911, p. 72.
36. Meyer: Cited in Jour. Laryngol., Rhinol. and Otol., June, 1912, p. 329.
37. Blumenfeld: Cited in Jour. Laryngol., Rhinol. and Otol., May, 1912, p. 294.
38. Wilkinson: Practical Medicine Series 1911, p. 329.
39. Gluck and Sorensen: Cited in Centralbl. f. Laryngol. u. Rhinol., etc., January, 1912, p. 51.

THROMBOPHLEBITIS OF THE EXTERNAL ILIAC VEIN

MEDWIN LEALE, B.A., M.D.

NEW YORK

Of recent years a number of monographs have appeared on thrombophlebitis. Among these may be mentioned those of Clark,[1] Brooks and Crowell,[2] Jakowski,[3] Cordier,[4] Cohen,[5] Kraemer,[6] and Kistler.[7] In addi-

1. Clark: Etiology of Postoperative Femoral Phlebitis, Univ. Penn. Med. Bull., 1902-1903, xv, 154.
2. Brooks and Crowell: The Relation of the Coagulation Time of the Blood to Thrombosis in Phlebitis, Jour. Exper. Med., 1908, x, 271.
3. Jakowski: Ueber die Mitwirkung der Mikro-Organismen beim Entstehen der Venen-thrombosen, Centralbl. f. Bakteriol., 1900, xxviii, No. 3, p. 801.
4. Cordier: Phlebitis Following Abdominal and Pelvic Operations, THE JOURNAL A. M. A., Feb. 16, 1905, p. 1792.
5. Cohen: Arch. Int. Med., Nov. 15, 1911, p. 684; Dec. 15, 1911, p. 820.
6. Kraemer, F.: Zur Frage der pramonitorischen Symptome der Thrombosen bzw. Embolien, Deutsch. Med. Wchnschr., July 11, 1912, xxxviii, No. 28, p. 1313.
7. Kistler, H. D.: Thrombophlebitis of the Left Leg, THE JOURNAL A. M. A., Aug. 10, 1912, p. 457.

tion Ludwig Aschoff[8] in a recent lecture has carefully considered the etiology and pathology of thrombosis. On the other hand, little seems to have been written on this pathologic condition in cases in which it involves the veins within the abdomen. On account of the paucity of such recorded cases it is my intention to consider in this article thrombophlebitis of the external iliac vein, going perhaps more particularly into its symptomatology and differential diagnosis, and finally to report a case complicating an otherwise uneventful convalescence from typhoid fever.

The great relative frequency of the occurrence of thrombophlebitis in the veins of the left leg is a familiar fact to most of us, and it has been commented on by many authors. This can be explained in large measure by the peculiar anatomic relations of the blood-vessels and other structures in the lower left quadrant of the abdomen. As so ably pointed out by Kistler,[7] the blood-flow in the left common iliac and external iliac veins is somewhat retarded by the peculiar anatomic relations of these vessels with the left common iliac and external iliac arteries and particularly with that of the left internal iliac artery as it arches around the left external iliac vein just below the point of origin of the latter. This tendency to a partial obstruction may also be increased by pressure against the body of the fifth lumbar vertebra and its intervertebral disk. It is not surprising, then, that below this point of partial obstruction we find a mechanical reason for the localization of thrombi and a consequent localized phlebitis. These pathologic conditions, however, occur more often at a more distal point, as in the calf or the thigh, and only rarely in the abdomen in the external iliac vein.

Thrombophlebitis in any one of the veins of the body is usually consequent on one or more of a variety of causes, as a bacteriemia or toxemia resulting from the surgical infections or infectious diseases. Thus we may see it complicating puerperal fever, or any one of the infectious diseases in which we have a pronounced toxemia or bacteriemia, as in typhoid fever, pneumonia or diphtheria. It occasionally complicates heart-disease, gout and operations, even though in the latter there may be no direct evidence of infection. Again, a simple thrombus may form if the coagulability of the blood is increased from any of a number of causes. Anything which injures or lowers the vitality of the blood-vessels tends to determine the formation of a thrombus, as does also any factor which tends to cause a pronounced slowing in the blood-stream.

Jakowski after careful experimentation points out that in most cases a constriction of the vessel-wall is needed to bring about thrombus formation, even in the presence of a bacteriemia. This vessel constriction is readily explained in the cases occurring in the left leg, and also in those occurring within the abdomen in the left external iliac vein, for the anatomic reasons already given. The same anatomic factors leading to a partial obstruction, however, do not obtain on the right side, and hence this side is much less often affected. It is thrombophlebitis occurring in the external iliac veins with which it is my purpose to deal in this article.

The symptomatology of this condition may be clear or it may be very obscure, calling for most careful watching to differentiate it early and satisfactorily from other acute abdominal conditions. I shall first consider the symptoms of this condition as they usually appear, and then give a few points which may serve to differentiate it from such acute conditions as appendicitis and perforation of the intestine.

In examining for lesions of the external iliac veins, we must carefully bear in mind their location. The external iliac vein is the continuation upward of the femoral vein and begins at the brim of the pelvis and runs upward and backward to form with the internal iliac the common iliac vein. To the clinician the external iliac vein occupies the space running upward, inward and backward from a point a little to the inner side of the middle of Poupart's ligament, passing over the brim of the pelvis to a point at the lumbosacral articulation and opposite the sacro-iliac joint. It is in this space, then, when the vein is sufficiently infiltrated, or is harboring a thrombus, that the external iliac may at times be palpated. The farther upward and away from Poupart's ligament the pathologic process occurs, just so much more difficult does palpation become, and the more confusing may be an early accurate diagnosis.

The diagnosis of thrombosis of the external iliac vein, when it is merely an extension of a like process in the femoral up into the abdomen, presents little if any difficulty; but when the process begins in the abdomen before signs have presented in the leg, the acute symptoms simulating at times other abdominal conditions, then it is that a differential diagnosis may be fraught with much difficulty. An early diagnosis in these cases is very important.

The earliest symptoms are usually a dull ache or a more or less sharp pain in the lower part of the iliac region with a subjective sense of fullness in the same location. The pain is usually localized from the beginning. This pain may be merely a dull ache, but more often it is intense, and later usually constant. There is often a sense of tightness in the same location. There may be numbness and disturbances of sensation; but, when present, they are less localized than the pain, often extending from above Poupart's ligament down into the leg.

One of the most characteristic symptoms is the behavior of the pulse. Either synchronous with or at times preceding the onset of the pain there is a sudden rise in the pulse-rate. This acceleration may at times be a rise from about normal to 110 or even 150 to the minute. The character of the pulse is usually small and may be thread-like. There may be irregularity or even intermittency. A steady step-like rise in the pulse may be the first sign to direct our attention to the possibility of thrombosis. The height of this rise in the pulse-rate is, however, not long maintained. With, or often a few hours after, the rise of pulse, there is usually a rise in the temperature. The onset or exacerbation of the fever may be accompanied by a distinct rigor, or more often by chilly sensations. The fever is usually more severe with septic thrombi. At times there may be sweating, and more rarely a cold, clammy skin.

It will often be later, sometimes twenty-four hours or more, before it will be possible to elicit anything definite by palpation. The first sign then will be a fulness or slight sense of resistance, usually with marked tenderness. There may be a moderate rigidity of the overlying muscles. Still later, if the thrombus or the inflammatory thickening is not situated too far up and back along the course of the vein, it will usually be possible by very gentle palpation to locate a firm sensitive cord in the course of the vein.

8. Aschoff, Ludwig: Thrombosis, Cartwright Lecture of the Alumni Association of the College of Physicians and Surgeons, New York, delivered at the New York Academy of Medicine, March 12, 1913.

After the symptoms have been limited to the abdomen for hours, or more rarely for a day or two, the process of the disease is usually indicated by enlargement and edema of the leg, whether the process has extended downward into the femoral, or upward into the common iliac vein, or perhaps has only remained in the original site. The last-mentioned process, however, is rare, for the disease usually develops into a more or less extensive phlebitis with at times the formation of additional thrombi.

Later, if the inflammation should extend downward below Poupart's ligament, it would usually manifest itself as a red line of inflammation along the course of the femoral vein. There may be a sense of increased heat in the area immediately above Poupart's ligament, but this is more constant below the ligament when the inflammation passes into the leg.

When the thrombus is inflammatory in its origin, edema often first presents itself at or near the site of the thrombus, or the edema may gradually develop in the whole lower limb at the same time. When there is little accompanying inflammation, the edema is more apt to occur at a more distal point, well down in the extremity. Edema may be a late symptom, and often on this account it is not present to help us in making an early diagnosis, which from a surgical point of view may be essential. Over the site of the thrombus or phlebitis or both, there may be a pale or glossy appearance of the integument, and there is usually increased heat. Over more distal points, however, there may be a reduction in the surface temperature. These symptoms are more often found in the leg resulting from obstruction to the venous flow from the leg. Cyanosis or a dilatation of the veins of the lower extremity may occur later. The edema of cardiac and renal disease shows more pitting on pressure than does that following thrombophlebitis. As cardiac and renal disease may be accompanying conditions, it may be well to keep this point in mind. Many of the above-mentioned symptoms may at times be lacking, even in the late stages; but when a number of them are present, the diagnosis is not difficult.

In differentiating thrombosis of the external iliac vein from other acute abdominal conditions we should carry our physical examination farther, noting the presence or absence of distention, whether regional or general tympanites is present, or whether there is free gas in the peritoneal cavity. If there is dulness in the flanks, there is usually free fluid in the peritoneal cavity, or the colon is greatly distended from intestinal obstruction. Liver dulness becoming pushed up, diminished or obliterated, might point to a perforation; but this unfortunately, is often not an early symptom of perforation of the intestine. In other acute abdominal conditions the pain is frequently not localized at the onset as is that of thrombosis of the external iliac vein, the location of the latter being a more or less constant factor. A more diffuse pain, later becoming localized, is more often seen in other abdominal conditions. The same may be said in a general way of the tenderness elicited by palpation. The presence or absence of increased peristalsis or of paresis of the intestine should be noted. When there is an acute abdominal condition accompanied by a high grade of toxemia, a marked fall in the blood-pressure follows, with possibly a cyanosis, with or without clammy skin and great prostration, together with a steady advance in the symptoms, unless the pathologic condition is relieved.

When a tumor is present in thrombus formation it is usually seen or palpated as a cord-like swelling or induration following the course of the vein. Rigidity of the overlying abdominal muscles is not so marked in cases of thrombosis of the external iliac vein as it is in many other acute abdominal conditions.

One of the most helpful signs in the early diagnosis of this condition, which has already been mentioned, is the peculiar rapid step-like rise in the pulse, which often mounts to considerable heights. The pulse, however does not usually long maintain its phenomenal increase in rate, but drops to a rate more in keeping with the temperature.

A careful examination of the blood may be of value in assisting us in making an early differential diagnosis.

Under ordinary conditions an increase in the relative number of polynuclear cells is an index to the severity of toxic absorption, and the increase in the total number of leukocytes is evidence of the resistance of the body to absorption.

In the acute stages of most of the infections there is an increase in the polynuclear leukocytes. In the early stage of thrombosis there does not seem to be in many cases so marked a rise in the polynuclear leukocytes, or in the total leukocyte count. This is particularly helpful in differentiating thrombosis of the external iliac vein from acute abdominal conditions associated with the formation of an abscess, as for instance appendicitis or on the left side an acute diverticulitis of the sigmoid.

In typhoid fever, as is well known, there is usually a leukopenia and a relative lymphocytosis. In this disease, when there is a complicating purulent exudate, and this exudate is due to the typhoid infection alone, there is no leukocytosis and no polynuclear increase. Sondern[9] tells us that in mixed infections with typhoid bacilli, such marked polynuclear percentages are not found as we usually get in pure staphylococcus or streptococcus infections. The careful periodic examination of the blood, therefore, may give us valuable confirmatory evidence.

When we come to consider the prognosis of thrombophlebitis of the external iliac vein, we must bear in mind the fact that the thrombus may or may not occupy the whole lumen of the vessel. At the start these thrombi usually lie along the side of the vessel, but later on may extend and finally occupy the whole lumen, in which case we have an occluding or obstructing thrombus. In this latter instance the prognosis will depend on how rapidly or completely the collateral circulation is established, or whether or not the thrombus is eventually absorbed and the lumen partly or wholly established.

Another point to be considered is the possibility of the separation of an embolus with its attendant dangers. The general condition of the patient has also to be considered. Where the heart and blood-vessels are sound and the circulation otherwise good, we would expect a more rapid disappearance of the symptoms. At times an organized thrombus may entirely disappear. An aseptic thrombus gives a much better prognosis than a septic one, other things being equal. Careful observers believe that organization may be well started within a week, but this is by no means the rule, and even then secondary degenerative changes may take place later with their attendant dangers.

9. Sondern, F. E.: General Considerations in Reference to Blood Examination in Surgical Diseases, New York Med. Jour., Jan. 26, 1907.

The case which I am about to report is that of a young man, aged 20, of athletic build, and of good health and vigor. The most serious affection from which he had suffered was an attack of scarlet fever, through which I cared for him six years previously, and from which he made a complete recovery.

On being called to see him I found that he had been ill for six days with what was said to be gastric fever. His temperature was 105.4 F., with headache, pain in the back and the history of nosebleeds. The next day, the seventh of the disease, the spleen was palpable and the Widal showed agglutination and loss of motility. The routine search for the plasmodia of malaria was negative. The urine also was negative. On the eighth day rose-colored spots appeared on the abdomen and chest; and on the tenth day the pulse became dicrotic. In other words, we had to deal with a clear case of typhoid fever. From the ninth day, when the temperature reached 105, the highest daily temperature, it went down by easy stages from day to day, until on the eighteenth day it remained at normal. A modified hydrotherapy was adopted varying from day to day, and he was kept on a rather high calorific diet. No cold baths were given.

Throughout the attack the heart and circulation had behaved well. The pulse at only three takings was over 90, and never over 92 to the minute. The average was in the lower eighties. It was as a rule fairly full, with, as usual, a tendency to dicrotism. I dwell on this point, because in this case the condition of the circulation was so good throughout the disease, that it seems to bear little etiologic relationship to the late complication which is about to be described. From the eighteenth to the twenty-fourth day convalescence was steady and uninterrupted.

On the evening of the twenty-fourth day, the seventh after the cessation of the fever, the patient was taken with a dull aching pain, alternating at times with one of a sharper character in the lower left quadrant of the abdomen. Coincidently with the appearance of this pain, the pulse began to rise and reached 132, then 140 to the minute, and became of small volume. The temperature rose only to 100.6, and that night fell again to 99, with later a drop in the pulse-rate to 102 to the minute At the onset there was a distinct rigor.

Gentle palpation over the left iliac region discovered what seemed to be a localized point of tenderness about an inch and a half above the middle of Poupart's ligament. There was no fullness or increased heat. There was some rigidity of the left rectus The patient was in a profuse perspiration. During the night and the morning of the following day the temperature rose steadily until it reached by the early afternoon, 103 F., the pulse hovering between 106 and 116 to the minute, its character being a variable quantity. During the day repeated blood-examinations were made by Dr. Ten Eyck Elmendorf, who remained with the patient for twenty-four hours for this purpose. The leukocyte count and the differential count were made at stated intervals. The total leukocyte count on the first examination was 10,750, later 14,700 and still later, 14,200. The differential count showed no marked polynuclear increase, and the last examination showed a return of the eosinophils which previously had been absent.

About twenty hours after the onset of the symptoms the diagnosis of thrombophlebitis of the external iliac vein could be definitely established, for on very gentle palpation the thrombosed and thickened vein could be felt just above Poupart's ligament and a sense of increased heat was imparted to the palpating fingers. Twenty-four hours later the inflammation had extended well down into the femoral vein and moderate edema of the leg had developed. The active symptoms with fever lasted nine days, after which convalescence went on without interruption, and he made a complete recovery.

I have considered particularly the symptomatology of this infrequent and at times bewildering complication, hoping that a discussion of the subject may be of value to those who may encounter like cases.

852 Lexington Avenue.

SKIN-GRAFTING WITHOUT DRESSINGS

JOSEPH WIENER, M.D.
Associate Surgeon, Mount Sinai Hospital
NEW YORK

Whenever we have a long list of drugs for a certain disease, not one of them is likely to be a specific. So in our surgery, whenever a large number of procedures are devised for any one lesion, the chances are that none of them "just fills the bill." So many different dressings to be used after skin-grafting have been suggested that we are forced to conclude that none of them is ideal. And yet I believe we have an ideal dressing for skin-grafts, and that is no dressing at all.

In January, 1907, I was asked to see a patient with extensive osteomyelitis of tibia and fibula following a crush wound. There had been extensive sloughing of the muscles and skin of the leg, so that, at a consultation of surgeons at the Long Island College Hospital, an amputation had been decided on. Although there had been a profuse purulent discharge, with septic temperatures for several weeks, and I did not feel confident of saving the limb, I advised against amputation. The patient was a strapping, healthy man of 43.

After I had done several operations on tibia and fibula, there was left an extensive ulcerating superficial area extending from the ankle to the knee, and involving about three-quarters of the circumference of the leg. Over this area the skin and some of the muscles had sloughed away. In the center of this area there was a sinus discharging pus from the tibia. There was continuous absorption from the large ulcerating area and the man's general condition in consequence did not improve much.

In spite of the fact that there was a discharging bone sinus in this region I covered the entire area, with the exception of the sinus, with Thiersch grafts. In the sinus I placed an iodoform gauze packing. Had I put any kind of a dressing on the leg, the pus from the sinus would have washed away the grafts. No dressing of any kind was applied, but the leg was swung from a bed-cradle. Twice a day the iodoform packing in the bone sinus was changed, without disturbing the grafts. In spite of the presence of this discharging sinus every graft took and the man's general condition rapidly improved. He has to-day a very useful leg. We could not have had a more unpromising case for skin-grafting. Could we have obtained such a result with any method of dressing after grafting?

The result in this private case, done over six years ago under such unfavorable conditions, was so striking that I have since that time used this method of open grafting. In several desperate cases in the service of Dr. Lilienthal at Mount Sinai Hospital we have had the most gratifying results. In some of the cases, as in my first case, there were discharging sinuses right in the area to be grafted. And yet the grafts almost always took. In one case, a double amputation of the breasts had left a very extensive ulcerating area involving almost the entire anterior surface of the chest. In spite of various forms of dressings, and different local applications applied during a period of several weeks, there was no sign of healing, and the patient's general condition, as the result of absorption from this large ulcerating area, was becoming steadily worse. The discharge was so profuse that we all agreed that grafts covered by any form of dressing would be unsuccessful. I covered the entire ulcerating area with thin grafts and left them

exposed to the air without any dressing. The grafts all took, the patient's general condition rapidly improved, and she soon left the hospital completely cured. It is probable that we saved the patient's life by this method of grafting. I doubt the success of other methods.

Our technic is the usual one for Thiersch grafts. The grafts are cut as thin as possible and applied in the usual manner. Suppurating sinuses in the grafted area are packed with iodoform gauze. These packings are changed, as often as they become saturated with the discharge, without disturbing any of the grafts. The grafts can be placed within a half inch of a discharging sinus and they will take. During the first day or two crusts of inspissated serum form between the different grafts; these crusts should not be disturbed. For seven or eight days, or even longer, no dressing of any kind is applied. Usually after the first day or two, the grafts have already become firmly adherent and have a healthy pink color. After seven or eight days a weak ichthyol ointment is applied over the entire grafted area. Under this dressing the crusts that have formed between the grafts drop off, and soon the area assumes a normal appearance.

I have found it inadvisable to apply a wet dressing, even a bland one, until at least two weeks have elapsed.

Fig. 1.—Skin-grafting without dressings, five days after operation. Note healthy appearance of all grafts.

If applied earlier, the wet dressing will in some cases macerate the grafts and thus, in part at least, vitiate the operation. It is true that even after the grafts have been macerated by a wet dressing, they will often recover their vitality when the wet dressing has been removed. But it is better not to run this risk. I even prefer to wait almost ten days before applying the ichthyol dressing. During these first ten days that the grafts are exposed to the air, they are steadily becoming more hardy; and nothing is really gained, whereas much may be lost, by putting on an early dressing. The accompanying illustration shows how the grafts look after five days; no dressing of any kind has been applied since the operation. The necrotic tibia, the seat of a compound fracture, can be seen about the middle of the leg. In grafts on the extremities the leg or arm is swung free from the bed-clothes. In grafts on the trunk, a cradle to keep off the bed-clothes is all that is required.

Our results from this method of skin-grafting, even in the most difficult cases, have been so much better than our former results with various methods of dressings, that we feel justified in recommending it. If the details set forth in this paper are accurately carried out, a single trial will convince the most skeptical of its advantages.

46 East Seventy-Eighth Street.

PLAGUE ERADICATION IN PORTO RICO

R. H. CREEL, M.D.
Past Assistant Surgeon U. S. Public Health Service
SAN JUAN, PORTO RICO

Plague was reported present in San Juan by the local authorities June 19, four days after the first suspicious case was observed, a promptness of action unprecedented in the history of plague. A general cleaning up of the city followed, and tons of rubbish were removed.

In response to a request from the acting governor, United States Public Health Service officers experienced in plague work were at once sent to San Juan by Surgeon-General Rupert Blue, and formulated a plan for the eradication of the infection from the island.

Before discussing eradicative work in Porto Rico and the epidemiologic features connected therewith, it may be of interest to refer to several features concerning antiplague measures which were considered.

The particularly striking aspect of plague infection is the tenacity with which the infection among rodents will cling to a place. This condition obtains seemingly irrespective of social or climatic environment or geographic distribution. In civilized communities, partial suppression as pertaining to human case incident is not so difficult. Let any enlightened people know that plague has gained entrance among them and the efforts of the citizens will greatly advance the work of the health officials in cutting down the rat population, and human cases seem to cease when the rodent population is reduced 50 per cent. or thereabouts. This was noted in San Francisco, and recently in Porto Rico. This cooperation, though, will continue only so long as human cases occur. On the cessation of human cases, even though the infection among rodents may be unaffected, or even increasing, the cry will go up "Plague is over, let us quit!" and quit they do. It is the same in all countries where plague infection causes commercial prejudice against a port or works a hardship in business affairs. So it follows that plague suppression and plague eradication are two different procedures. It is therefore imperative that antiplague work accomplished in the first days of a threatened epidemic, when popular opinion is strongly approving all sanitary requirements, should be of as permanent a nature as possible. Ratproofing cannot be instituted too soon or enforced too vigorously.

In Porto Rico the cooperation of the people in plague suppression was as hearty and prolonged as could be expected in any country. But here, as elsewhere, occurred the lagging of interest, even antagonism, when eradicative measures continued after subsidence of human cases. It is this factor, then, this indifference of a community to rat infection as long as there are no human cases, that is largely responsible for the persistence of rodent plague infection. As a matter of fact, plague infection of the bubonic type, among people, is only of humanitarian interest. Plague being primarily a disease of rodents, the entire procedure of eradication concerns the rat and its parasites, and human case incidence can be ignored in pursuing a plan of campaign. This, of course, does not apply to pneumonic plague but only to the straight bubonic types that have occurred in the western hemisphere. Too often does the status of human cases serve as an index of the presence or absence of infection, without a proper survey of the rodent population. A number of places can be cited where suppressive measures were enforced only so long as human cases

occurred. On the subsidence of human infection the work dragged and finally ceased, the infection continued in rodents and a recrudescence followed soon or later. This has happened notably in Trinidad and different South American ports, La Guayra and Guayaquil especially, in the Canary Islands and in various parts of the Orient.

THE PLAN PURSUED

The service plan of campaign and the extent of its enforcement, therefore, was based solely on the progress

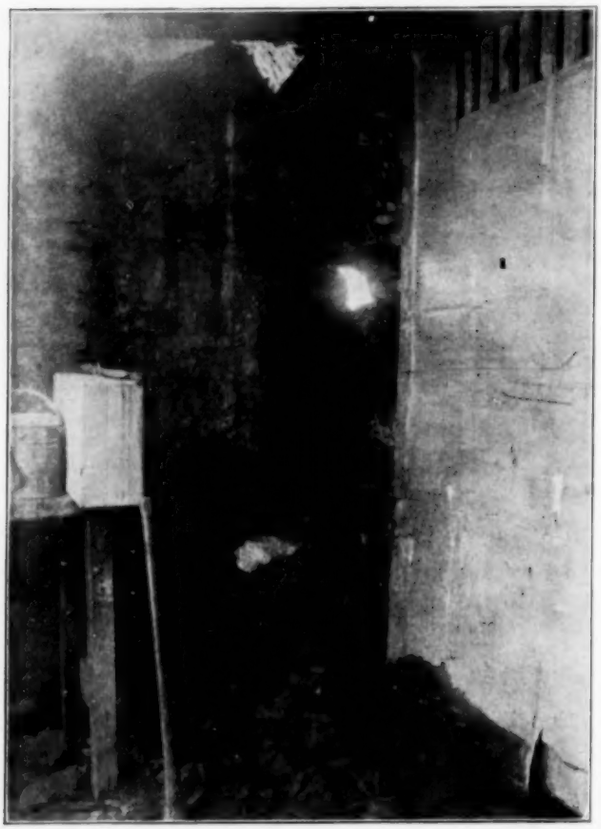


Fig. 1.—Mamposteria wall—stone, sand, clay and lime. Walls riddled with rat runs. Eight rats taken from interior wall. Site where plague rat was found.

of infection among rats, the above-mentioned factors being given primary consideration in the problem of freeing Porto Rico from plague. Especial attention was paid to the rat-proofing of all buildings, the one feature of permanent effectiveness in deratization. The work was prosecuted with such vigor during July, August and September, by the Public Health Service organization, aided by the insular government forces, that the last vestige of infection in San Juan was apparently destroyed on September 11. The last case of human plague in Puerta de Tierra, the district with heaviest infection, and where the first patient was discovered, occurred on August 5 and the last rodent case on September 11. On September 8, in a suburb of San Juan, occurred the last human case in Porto Rico. It is thus seen that from the discovery of the disease till the last rodent case was a period of only eighty-four days. During that time there were fifty-five human cases with thirty-six deaths. Sixty-six infected rats were captured up to January 1, which number includes seven from Carolina, in July, and six from Caguas and Arecibo in the period from September to January. No human cases, so far as known, have occurred in Arecibo or Caguas.

ORGANIZATION

The essential points of the service organization were patterned after the service methods used in San Francisco in 1907-08, with modifications according to local conditions, and embraced the quickest possible rat-proofing of the whole city; wide-spread trapping and poisoning; inspection of inland-bound freight, to prevent transportation of rodents; the tagging of all rats so that the location of any infected rodent would be known and the progress of infection mapped out, and the sulphur fumigation (in conjunction with the intensive rat-proofing) of all infected premises. Disinfection was not utilized, being considered not pertinent to anti-pest measures in absence of pneumonic type, aside from involving a waste of time and money. Pulecidal measures were observed. Sulphur fumigation and petroleum, or petroleum emulsion, were the agents employed for this purpose.

The city of San Juan (the capital of Porto Rico, with a population of 50,000) is located on a headland. The site of the city is really in the formation of a peninsula, though two narrow estuaries separate it from the mainland with the formation of two islands. The estuaries are well bridged, however.

On the point of the peninsula is located the old city, together with the water front district called "La Marina" and another small suburb called "La Perla." Continuing inland, Puerta de Tierra is next met with. This is a district of San Juan built almost wholly of frame construction and separated from the older city by a quarter of a mile of unbuilt-on land. The suburb of Santurce (of modern construction) is built almost wholly of frame construction. A considerable stretch of unoccupied land separates Santurce from Puerta de Tierra, in addition to bridges over the estuary.

Fig. 2.—Roofing of country tiles, Caguas, P. R., which affords harbor for rats.

RAT-PROOFING

The first step taken was the securing of a rat-proofing ordinance. In general the measure embraced rat-proofing requirements for dwellings, food depots, warehouses, docks, stables and chicken yards. Dwellings were required to be elevated 2 feet from the ground, with the underpinning free, or to have at the perimeter a concrete wall 2 feet below the surface of the ground and fitting flush to the floor of the building. All food depots, from

the smallest eating-place to the largest wholesale warehouse, were required to build a substantial concrete floor with side-walls of the same material extending 2 feet below ground level and 1 foot above the floor level, with the doors and windows so repaired as to exclude rats. All groceries, meat markets, bakeries, restaurants, general markets and warehouses in San Juan were so treated. Stables in Porto Rico consist only of the floor and roof, so it is not practicable to make them inaccessible to rodents. They were required, however, to have a concrete floor protected by sidewalls 2 feet in depth, the crib to stand free of all uprights with a flare from below upward, and lined on the outer side by galvanized iron. It may be added that stables in Porto Rico were found not to be the rat harbors that stables are in the United States, possibly for the reason that grass is chiefly used as feed, with very little grain. The above procedure at least prevented rat harborage about stables. Feeding-pens for chickens were required to be of concrete floor and walls, protected by one-fourth inch wire mesh.

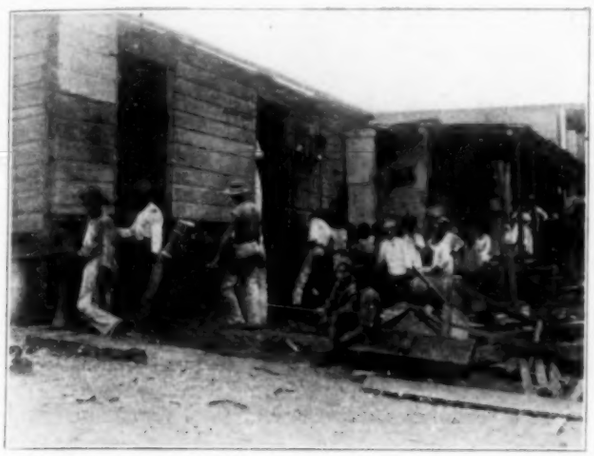


Fig. 3.—Rat-proofing, by elevation, in Puerta de Tierra.

The requirement for docks included concrete floors and walls. One large dock in San Juan was built on filled in land. It had roof and walls of galvanized iron, but with bare earth floor. Owing to the constant settling of the ground a concrete floor was impracticable. The expedient adopted consisted in marginal rat-proofing (a concrete wall for the entire perimeter, doors fitting flush), and the interior space partitioned off by sheets of galvanized iron sunk into the ground and extending upward 5 feet. The floor space was thus subdivided into ten compartments. Once every two weeks one compartment was required to be cleaned and free of all cargo, the transfer to be effected in one day. By this procedure, not only can rats be killed but also a constant index of rodent infestation is afforded. All other docks were required to be free of cargo and cleaned once every two weeks. No matter how rat-proof a building may be, if a large quantity of freight is kept in storage, rats will accumulate therein, especially the *Mus rattus*. With exception of the dock just described, all piers were rat-proofed by concrete floors and walls.

The rat-proofing law was easily applicable to buildings of frame construction, but the class of construction in the older part of the city proved to be a problem. Most of the buildings are very old and were built long before cement was in use. Of broad walls, and constructed one against another, they may be considered sufficient from a structural standpoint, but the material of which they are composed offers no great obstacle to the passage of rats. Many had no foundations, the broad walls resting on the ground; others had shallow foundations of crushed brick with a few stones, with the interstices filled by a mixture of clay and sand. This old type of construction is known as *mamposteria*, and though somewhat different from the *pukka* construction in India, the description of buildings in Bombay by the Indian Plague Commission, both as to the nature of the material and as to the degree of rat infestation, is strikingly similar to those in San Juan. Whether the walls were built of crushed brick, or irregular stone, or brick on brick, the weak point was caused by the kind of mortar used. This old mixture of lime, sand and mud, through the onslaught of the elements, in the course of time loses its adhesive properties and becomes easily pervious to the passage of rats. Many of the walls were found to be riddled with rat runs and rat excavations. The fact that the walls were broad and had withstood earthquake shocks seemed to be sufficient argument with most of the householders that they were therefore rat-proof. Even the material evidence of rat infestation did not seem to be any refutation of this argument. As a matter of fact, the very breadth of the walls served all the more to make them rat harbors, the rats tunneling in all directions. That several cases of plague acquired their infection in buildings of this type emphasized the importance of making them as rat-proof as possible.

The absolute rat-proofing of these *mamposteria* walls was not possible. As destruction was impracticable, a device was used which was very effective. This consisted of a concrete capping on the walls, 2 feet in depth and extending upward from the floor, the latter to be of concrete. The court-yards in old San Juan likewise

Fig. 4.—Site where a plague rat was found, after elevation. Building formerly tight to the ground.

proved to be a feature out of the ordinary in rat-proofing. Even though a store-house might be rat-prooted to the extent of walls and floor, the pipes and wires running from the ground floor to the top of the building on the inside of the court would give easy access to such a building, more especially to the *Mus rattus* and *Mus alexandrinus*. The rat-proofing of courts, therefore, consisted in the requirement of the protection of pipes and

wires by a galvanized iron collar surrounding pipes and wires, 2 feet in diameter, similar to the rat guards on ship hawsers.

RAT TRAPPING AND POISONING

For the purpose of trapping and poisoning rats the city was divided into districts and a foreman and four trappers were assigned to each. Over the foremen was placed a supervising inspector. The foremen were made responsible for the property of the trappers and for the

Fig. 5.—Rat-proofing in Puerta de Tierra.

efficiency of their work. As the local market could furnish scarcely over a hundred traps, a cable order was sent early in July to Washington for 3,000 traps of approved patterns. This number was increased in the latter part of July and August by 6,000 more. About 3,000 traps were in use for San Juan, the remaining number distributed in other parts of the island. To each trapper were assigned seventy-five traps, part cage and part snap pattern.

Forty trappers, ten foremen and one supervising inspector constituted the trapping and poisoning force in San Juan. During the hours when trappers were not attending to traps they distributed poison. Between July 1 and January 1, 600 pounds of arsenic and phosphorus poison were distributed.

All rats were tagged with the address from which they were taken. Only in the old city were there any large sewer mains. From these a large number of rats were taken.

A large majority of the houses in San Juan have no municipal number, so it was necessary to lay out the city in districts with special numbers. In this way the municipality of San Juan was divided into fifty-four districts, each district varying from one to four hundred buildings. When an infected rat was taken or a human case discovered, evacuation followed with sulphur fumigation. Chief reliance, however, was placed on the destruction of rat harborage and intensive rat-proofing. Infectivity of houses sufficiently prolonged as to cause secondary cases was noted in four instances, three of which were in *mamposteria* buildings. These, however, were in the first days of the epidemic before sulphur fumigation or rat-proofing had commenced. No guinea-pig experiment as to the infectivity of a house was performed, as the campaign was an eradicative one and not experimental.

Tables are appended giving data concerning classification of all rodents, infected rodents, and nature of buildings from which the latter were taken.

The rat catch increased during the first two or three weeks, reaching a maximum the last week in July. From that date on a steady decline ensued. This was most marked in Puerta de Tierra where the earliest and most careful attention was given to rat-proofing. Coincident with the decline of the rat population occurred the last human case in Puerta de Tierra. The last plague rat was taken from that district in September, when the rat population was reduced to 22 per cent. of the July maximum. By January 11 the rat population had fallen to 10 per cent. in Puerta de Tierra. This decrease is all the more accentuated by the fact that the trappers were week by week becoming more experienced, the number of foremen in September being doubled, so that the supervision was twice as strict as before, and the rat bounty, which was paid in addition to their salaries, was increased from five to ten cents, with an offer of one dollar for any infected rat taken. All these factors would naturally operate to increase the number of rats caught, so that from a comparative estimate it would seem that the percentage of reduction was really greater than is indicated by the actual number of rodents caught.

The result of rat-proofing measures, in Puerta de Tierra especially, is a good example of how unnecessary is the general destruction of property in plague epidemics. There was a loud clamor for the burning of this district at the inception of the epidemic, a procedure that has been pursued in no inconsiderable number of instances in different countries. Aside from the question of property rights and needless expense, a widespread conflagration would have served only to scatter infection.

In Porto Rico, as was noted in India, general insanitary conditions did not seem to be a factor influencing in any way the incidence of human cases. The most

Fig. 6.—Restaurant; site of plague infection, human and rodent. Concrete floor and walls substituted for plank flooring.

squalid part of Puerta de Tierra, a section located on the seashore, where from the nature of the swampy ground the houses had been built more or less elevated, was especially free from human cases. From a superficial point of view one would have expected this section of congested shanties and indescribable squalor to suffer heavily from the ravages of the disease. The swampy nature of the ground, which, being more or less

inundated by the daily tides, called for an elevated construction, operated for the salvation of these people. The better part of Puerta de Tierra was the section that had the majority of all cases. Puerta de Tierra, however, despite its present unsightly and general insanitary condition, is to-day the district of San Juan most free from rats, and, consequently the best part of the municipality from the point of view of plague. Of the 1,125 buildings, all are either elevated 2 feet with underpinning free, or have a concrete floor and side walls. The marked diminution in rat population could have been secured in no other way than by rat-proofing, as it is impossible to prevent people residing there from throwing foodstuffs about the streets and lots. The entire cost of rat-proofing Puerta de Tierra was $80,000.

Accompanying the tables of rats caught is given the catch of *Mus musculus*. No bounty was paid for *Mus musculus*, and the traps used were a large pattern intended solely for the catching of rats. While any efforts of the trappers along this line were discouraged, they were directed to turn in all captured mice. The increasing number of mice, therefore, which would have been very considerably multiplied had any special effort been made to catch them, all the more emphasizes the decrease in the rat population. It is well known that mice do not live or multiply in numbers when associated with *Mus rattus* or *M. norvegicus*.

INSPECTION OF FREIGHT TRAFFIC

All inland-bound freight was inspected. Those packages that could harbor a rat were either unpacked and examined or fumigated by sulphur. In this manner fifty-seven rodents were taken from freight. None of them was infected. All freight cars were rat-proofed, and if left in San Juan freight yards over night, loaded or partly loaded, the doors were sealed by an inspector.

It is highly probable, though, that in those weeks that the epizootic prevailed, before the recognition of its presence, and immediately afterward before freight inspection was initiated, plague rats escaped from San Juan, causing the transmission of infection to Carolina, Arecibo and Caguas.

In answer to an inquiry sent to island health officials, in October, for the purpose of estimating the efficiency of this freight and car inspection, some sixteen replies were received stating that no rodents had been observed since the inauguration of the inspection, but several officials stated that before and in the first days of the epidemic, rodents had been observed escaping from cars and from packages of merchandise. This was especially noted in Caguas.

EXTENSION OF INFECTION

The discovery of a case of plague June 26 in a freight handler at Carolina handling freight from San Juan indicated that the disease had spread beyond the latter place. It was probably transmitted by rats in merchandise. The man had not been out of Carolina, which was 14 miles from Jan Juan. Two other cases occurred in Carolina, the last on July 16. Seven plague-infected rats were taken from Carolina during July but none later. July 11 a plague rat was found dead in the streets of Rio Piedras, two or three miles distant from San Juan, from which place it had probably migrated. No human cases occurred. July 13 a fatal plague case in a boy occurred in Dorado, a town 34 kilometers distant from San Juan. The week previous to death, the boy had been out of Dorado as a stowaway in freight car *en route* from San Juan to Arecibo and probably contracted his infection from an infected rat in the San Juan freight. Sept. 23, 1912, a plague rat *(Mus norvegicus)* was trapped in Caguas, 23 miles from San Juan. Other plague rodents were taken from different parts of the town October 14, December 9 and 21. Eradicative measures similar to those instituted in San Juan were employed. A plague-infected rat was trapped in Arecibo October 11 and another October 25. Routine eradicative measures were instituted. No human cases occurred. Transmission of infected rats to these places through railroad merchandise seems the more probable theory, as no rat infection was found at intermediate points, although a noticeable mortality among rats on the San Juan-Caguas turnpike was reported two or three weeks prior to the discovery of the first infected rat at Caguas.

PLAGUE PREVENTIVE MEASURES TO NON-INFECTED POINTS OF PORTO RICO

In view of the possibility of unknown rural spread of the infection among the rodents of Porto Rico, it was decided to institute active measures in the two other large seaport cities of the island. Service officers were sent to Ponce and Mayaguez in early August, and enforced the same measures in those places that were being effected in San Juan. No infected rodents were discovered in these two ports. Later on trappers were sent to Aguadilla, Bayamón, Manatí and other island towns, the rat catch being sent to the laboratory in San Juan, but no infected rodents were found from these places.

LABORATORY METHODS

The method of rodent examination was the same as that used in the service operations in San Francisco. Laboratory attendants tacked the rodents on shingles, dissected them and made clerical records concerning their source and any other data pertaining to the work. Consideration of the gross lesions was depended on for diagnosis, and animal inoculation was required for purpose of confirmation of rats suspicious of infection.

There was a marked reduction of infected rodents in August, but a reliable estimation of the progress of rodent infection from the beginning of the epidemic in San Juan is precluded for several reasons. In the first week of rat examination there was no wide-spread trapping, and the rodents examined came from a comparatively small area. The town people at first turned in many dead rats, but later, as suppressive measures worked an inconvenience, they burned them. The difference between the technic employed the first week or two and that used during the remaining days of the epidemic, would be another source of error. The first cases were diagnosed by smear only, a bipolar bacillus determining the diagnosis; whereas later the gross lesions were considered and confirmation by animal inoculation was required. During July and August a considerable number of rodents were encountered presenting marked subcutaneous injection with bubo. Smears made from the tissues would not infrequently show bipolar bacilli or a diplococcus. Without animal inoculation these rodents might have been considered as probable plague.

In addition to the examination of rats 233 mongooses which were caught in traps were sent to the laboratory for examination. None of them was found infected.

A separate record for rat catch by districts was not started in San Juan until July 10. At first the rat catch in Puerta de Tierra came mostly from buildings, but recently almost wholly from the adjoining swamp

shrubbery and fields. The rat-trapping force and the number of rat traps maintained throughout the municipality did not vary, so that the percentage per trap is unnecessary in a comparative study.

TABLE 1.—CLASSIFICATION OF ALL RODENTS EXAMINED IN PORTO RICO FROM JUNE 23 TO JANUARY 11*

Norvegicus	23,453	Mongoose	233
Rattus	4,201	Unclassified*	309
Alexandrinus	5,962		
Musculus	5,137	Total number examined	39,295

* The unclassified were those examined during the first week of laboratory examination.

TABLE 2.—CLASSIFICATION OF INFECTED RODENTS

Norvegicus	37	Unclassified	24
Rattus	4		
Alexandrinus	1		66

TABLE 3.—NATURE OF BUILDINGS FROM WHICH INFECTED RATS WERE TAKEN

From dwellings	23	Turned in untagged	21
From food depots	8	Found dead on streets	10
From stables	2		
From steamships	2		66

TABLE 4.—WEEKLY RAT-CATCH IN PUERTA DE TIERRA

Date	Rats	Mice	Date	Rats	Mice
7/10/12— 7/13/12	15	5	10/13/12—10/19/12	33	92
7/14/12— 7/20/12	193	...	10/20/12—10/26/12	26	78
7/21/12— 7/27/12	176	...	10/27/12—11/ 2/12	38	7
7/28/12— 8/ 3/12	174	...	11/ 3/12—11/ 9/12	30	47
8/ 4/12— 8/10/12	154	...	11/10/12—11/16/12	21	35
8/11/12— 8/17/12	136	...	11/17/12—11/23/12	29	60
8/18/12— 8/24/12	102	...	11/24/12—11/30/12	31	47
8/25/12— 8/31/12	98	7	12/ 1/12—12/ 7/12	20	57
9/ 1/12— 9/ 7/12	41	7	12/ 8/12—12/14/12	45	64
9/ 8/12— 9/14/12	58	13	12/15/12—12/21/12	20	68
9/15/12— 9/21/12	49	34	12/22/12—12/28/12	10	98
9/22/12— 9/28/12	51	21	12/29/12— 1/ 4/13	20	70
9/29/12—10/ 5/12	39	27	1/ 5/13— 1/11/13	14	126
10/ 6/12—10/12/12	48	43		1,671	1,006

TABLE 5.—WEEKLY RAT-CATCH IN SAN JUAN

(The old city, Marina, and La Perla)

Date	Rats	Mice	Date	Rats	Mice
7/10/12— 7/13/12	15	8	10/20/12—10/26/12	82	19
7/14/12— 7/20/12	121	6	10/27/12—11/ 2/12	77	48
7/21/12— 7/27/12	322	...	11/ 3/12—11/ 9/12	59	6
7/28/12— 8/ 3/12	357	...	11/10/12—11/16/12	57	56
8/ 4/12— 8/10/12	363	...	11/17/12—11/23/12	85	57
8/11/12— 8/17/12	257	...	11/24/12—11/30/12	81	44
8/18/12— 8/24/12	233	...	12/ 1/12—12/ 7/12	122	36
8/25/12— 8/31/12	198	15	12/ 8/12—12/14/12	73	55
9/ 1/12— 9/ 7/12	166	20	12/15/12—12/21/12	152	92
9/ 8/12— 9/14/12	131	30	12/22/12—12/28/12	97	96
9/15/12— 9/21/12	179	7	12/29/12— 1/ 4/13	68	70
9/22/12— 9/28/12	184	23	1/ 5/13— 1/11/13	82	55
9/29/12—10/ 5/12	102	33			
10/ 6/12—10/12/12	145	38		3,951	873
10/13/12—10/19/12	143	59			

TABLE 6.—WEEKLY RAT-CATCH, SANTURCE*

Date	Rats	Mice	Date	Rats	Mice
7/10/12— 7/13/12	94	41	10/20/12—10/26/12	208	14
7/14/12— 7/20/12	160	6	10/27/12—11/ 2/12	222	10
7/21/12— 7/27/12	178	...	11/ 3/12—11/ 9/12	154	9
7/28/12— 8/ 3/12	297	...	11/10/12—11/16/12	142	16
8/ 4/12— 8/10/12	276	...	11/17/12—11/23/12	92	29
8/11/12— 8/17/12	240	...	11/24/12—11/30/12	87	25
8/18/12— 8/24/12	255	...	12/ 1/12—12/ 7/12	108	31
8/25/12— 8/31/12	299	8	12/ 8/12—12/14/12	110	40
9/ 1/12— 9/ 7/12	319	14	12/15/12—12/21/12	124	64
9/ 8/12— 9/14/12	336	9	12/22/12—12/28/12	74	76
9/15/12— 9/21/12	342	8	12/29/12— 1/ 4/13	107	84
9/22/12— 9/28/12	341	13	1/ 5/13— 1/11/13	94	68
9/29/12—10/ 5/12	308	12			
10/ 6/12—10/12/12	254	3		5,502	600
10/13/12—10/19/12	281	20			

*The rats being trapped in Santurce, as in Puerta de Tierra, now come chiefly from the swamp shrubbery and surrounding fields, instead of as formerly from buildings.

FLEA SURVEY

The number of live rats examined for fleas during the months of July and August was not sufficient to permit an estimate of the percentage of infestation. The species of fleas found were: *Xenopsylla cheopis, Ctenocephalus canis, Echidnaphaga gallinacae,* and the *Rhynchoprion penetrans* (chigoe). The latter species of flea was one found only on human beings in San Juan. Burrowing beneath the skin, it ovulates, making a very painful nodule. Several plague cases were found to have these chigoe nodules. It would be of epidemiologic interest to know whether the female immediately penetrates the skin of her first host and ovulates, or whether she may feed on one or more hosts prior to depositing her eggs. This was not determined.

SUMMARY AND CONCLUSION

From the foregoing it is seen that there were fifty-five cases of human plague in the Porto Rico epidemic, ten having occurred at the date of announcement of the disease and forty-five thereafter. All of them were of the bubonic type, with a mortality of 65 per cent.

Flea infestation in Porto Rico is very low compared with that in other tropical countries. The data are not sufficient to show whether or not there is a seasonal variation. The infestation of rats by chicken-flea in San Juan is noteworthy. The decline in rat population, as indicated by the weekly catch, was marked and to a large degree was the result of rat-proofing. The rat infection extended to four points outside of San Juan: To Carolina, a distance of 14 miles; Caguas, 23 miles; Arecibo, about 50 miles, and Rio Piedras, 3 miles. Only in the first-named village did human cases occur.

The presumptive evidence points to an extension by infected rats in merchandise. The infection in Rio Piedras might have been carried there by migratory rodent.

In Porto Rico the *Mus norvegicus, Mus alexandrinus* and *Mus rattus* infest houses, but the former predominates. *Mus alexandrinus* is the species chiefly found in rural districts. Sufficient data are not at hand as to the variation of breeding, but it is probable that there is no seasonal fluctuation of this nature among the rodents of Porto Rico.

It cannot be too strongly recommended that all ports should maintain their water front as rat-proof as possible, and as rat-free. Especially should this apply to those warehouses receiving foreign shipments. Maritime quarantine has proved of such great value that its defence is not necessary, but, nevertheless, short of prohibition of commerce, the procedure cannot be considered as absolute protection. The importation of rats as undetected stowaways in merchandise cannot be prevented where the port has extensive trade relations. Moreover, as a rodent infection may exist for several weeks prior to human cases, any port can in all good faith claim to be clean when, as a matter of fact, there may be wide-spread rat infection. It therefore behooves all seaboard cities to keep their water front premises as rat-free as possible, so that, should a plague rat gain entrance, the infection would be least apt to spread.

Established Methods in Sanitation.—The *Bulletin* of the Florida Board of Health says that it is an easy matter to follow in the wake of public clamor against imagined menaces to public health, but that it is not sound wisdom to recommend anything either to protect life or to preserve health on speculative theory or possibility. When deviation is made from this course the sanitarian is getting into deep water. Sooner or later a reversal of judgment follows, and the public, it is said, then begins to doubt whether the sanitarians really know what they are talking about. To play to the galleries of popular approval on the ground of progressive sanitation is really a hindrance to the advance of preventive medicine, and sooner or later reacts and brings discredit on the person or the board recommending it.

THE FIRST SUCCESSFUL RESECTION OF THE THORACIC PORTION OF THE ESOPHAGUS FOR CARCINOMA

PRELIMINARY REPORT *

FRANZ TOREK, A.M., M.D.

Surgeon to the German Hospital and the New York Skin and Cancer Hospital, Adjunct Professor of Surgery in the New York Postgraduate Medical School

NEW YORK

The resection of the thoracic portion of the esophagus for carcinoma has been one of the greatest problems of modern surgery. A number of careful investigators have declared their standpoint in this matter to be that operations for carcinoma of the esophagus should be undertaken only if the new growth is either high up near the neck or low down where an anastomosis with the stomach can be made, but that the growths in the middle portion of the esophagus are not removable.

The reasons for excluding these cases from the realm of operative interference were, first, the inaccessibility of that portion of the esophagus which passes underneath the arch of the aorta, and, secondly, the danger of injuring the pneumogastric nerves which in that location branch in front of the esophagus like a plexus. Division of both pneumogastric nerves at a place before they reach the heart causes instant death, and at operations in that region it has been repeatedly observed that tugging at a vagus, or pinching it, is promptly followed by collapse in the pulse which persists until death sets in. Finally, the uncertainty of the closure of the upper stump of the esophagus and the consequent infection of the pleural cavity have been a great source of danger after resection of any part of the esophagus where an anastomosis cannot be made. The leakage from that stump is undoubtedly due to the tension in the esophagus from swallowed saliva. Every contraction of the constrictors of the pharynx temporarily increases the tension in this blind pouch, until the suture finally is unable to withstand the pressure from within.

Statistics show that carcinoma of the esophagus is most frequently found in the middle third, the location in the lower third coming next, while cases in the upper third are comparatively rare. On the other hand, metastases are found most frequently with those situated in the lower third, near the cardia. Since, therefore, the carcinomas at the cardia are not only numerically less frequent than those in the middle third, but are also more frequently associated with metastases and are therefore incurable, the most important problem in cancer of the esophagus is that of extirpating the carcinomas in the middle portion, the very ones that Sauerbruch and others have told us should be left alone.

In an operation performed at the German Hospital on March 14, 1913, I have shown that the resection of the middle portion of the esophagus for carcinoma is possible.

The patient, a woman, 67 years old, had a carcinoma of the esophagus beginning a little above the lower border of the arch of the aorta and extending from there downward for an inch and a half or more. I had performed a gastrostomy on her some time previously. The difficulties of the case being known, the problem was to plan the ways and means of overcoming them. It was necessary, first, to afford better access, secondly, to perform more careful dissection of the pneumogastric nerves, avoiding rough handling of them and, thirdly, to do away with the danger of leakage from the proximal stump of the esophagus after resection.

I shall not enter into the details of the operation, but simply outline the most important parts of it.[1] Instead of seeking access by going through two different intercostal spaces and dissecting off the scapula or by resecting several adjacent ribs, procedures recommended by others, I incised through the whole length of the seventh intercostal space, from the posterior end of which I extended the incision upward by cutting through the angles of the seventh, sixth, fifth and fourth ribs, which gave a much better exposure and is far simpler. The greater ease of access enabled me to dissect the pneumogastric nerves more carefully, and, to my great satisfaction, the pulse never wavered during this procedure, remaining between 93 and 96. The dreaded vagus collapse had therefore been safely avoided. The great difficulty of dissecting that part of the esophagus which passes behind the arch of the aorta was overcome by ligating a number of the thoracic branches of the aorta and lifting it forward. Last, but perhaps most important, to avoid the danger of leakage from the upper stump of the esophagus, I eliminated the esophagus from the pleural cavity altogether. This was done by dissecting the organ loose from its attachments all the way up to the neck and bringing it out through an incision at the anterior border of the left sternocleidomastoid muscle. Thus the pleural cavity could not possibly become infected from that source.

The thorax was closed without drainage. The patient made a good recovery. Some of the stitches were removed on the fourth day; the remainder were removed on the seventh day, when the wound proved to be completely closed. Pulse, respiration, and temperature had become normal by the fifth day.

Thirty-two years ago the first successful resection of the stomach for carcinoma was performed by Billroth. It took a very long time before the operation became popular; now its performance is by no means infrequent.

The operation for carcinoma of the esophagus, I feel certain, will gain friends very quickly, now that the way has been shown for its successful management. The details of the operation will be published presently. The most important thing to consider is that safety depends to a great degree on early diagnosis and early operation, and we must not forget that even very slight difficulty in swallowing may be due to cancer of the esophagus which requires operation. In the light of the success which attended this new method of attacking the disease, it becomes our evident duty to advise operation at once, and thus we shall have the satisfaction of saving the lives of many who otherwise would have been doomed to succumb to their affliction.

1021 Madison Avenue.

* Read at a meeting of the New York County Medical Society, March 24, 1913.

1. Anesthesia was given by tracheal insufflation according to the Meltzer-Auer method.

SUCCESSFUL TRANSPLANTATION OF GRAFT WITHOUT PERIOSTEUM

HORACE G. WETHERILL, M.D., DENVER

Since the publication of my paper, "The Growth, the Death and the Regeneration of Bone,"[1] the question has been raised whether or not the ultimate result in my second case, in which the graft *was transplanted without periosteum*, was satisfactory.

I have been reminded that few attempts have been made to transplant grafts *en masse* in human beings, *without periosteum*, and that of these many have failed. It has been pointed out that a roentgenogram made four weeks after

1. Wetherill, Horace G.: The Growth, the Death and the Regeneration of Bone, THE JOURNAL A. M. A., March 29, 1913, p. 983.

operation is not evidence of success, and grave doubt is expressed regarding the satisfactory termination of this attempt to reproduce the bone under such circumstances.

Anticipating that the same doubts may have arisen in the minds of many other readers of THE JOURNAL from whom I have not heard, I should like to say that at this time (six months after the operation) the patient is walking without crutches and is wearing no splint or cast, and that the shaft of the bone at the grafted point feels and appears larger in diameter than the tibia of the opposite leg.

The accompanying photograph (Fig. 1) showing the boy standing on the grafted leg with the sound one raised from the floor should be convincing, as is also the roentgenogram (Fig. 2) of the grafted tibia.

Remarkable regeneration of this bone is shown after only six months of growth, and it is fair to assume that by the end of a year the bone will be satisfactorily reproduced.

Permit me to call attention again to the vastly better union shown at the lower end of the graft, where my side splice was made, than at the upper end, where the graft was driven into the excavated medullary canal. This is beautifully brought out in this last roentgenogram, and is in my opinion an important practical demonstration of the advantages of this method of making the union (that is, by a broad lateral apposition of the fragments) whenever it is possible to do so.

Fig. 1.—A graft 3½ inches long *without periosteum* was transplanted into the left tibia to bridge a gap, Sept. 28, 1912. Result April 6, 1913, after six months.

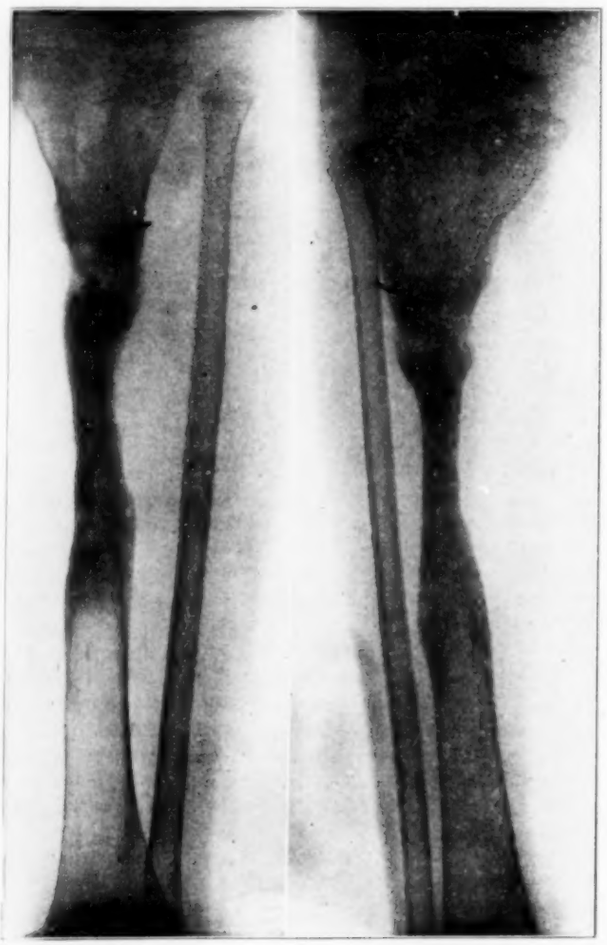


Fig. 2.—Roentgenogram of tibia made April 5, 1913. Front and lateral views. Note firm union at lower end of graft where side splice was made, and somewhat imperfect union at upper end where the graft was driven into the excavated medullary canal. The small light spot over the lower end of the graft indicates the slight necrosis which still persists from the original infection. A small suppurating sinus on the skin leads down to it.

Even the limited low-grade infection which was mentioned as having occurred at this point, and which still persists, has not interfered in any way with union between the graft and the diaphysis, and though the union at the upper end was uninfected it is not so firm or satisfactory.

310 Metropolitan Building.

IMPACTED URETERAL CALCULI RELEASED BY FULGURATION

H. D. FURNISS, M.D., NEW YORK

This case is of interest in that it shows an error of diagnosis and offers a suggestion as to a new method of treatment.

Patient.—Mrs. B. G., a large, stout woman, aged 49, referred to me by Dr. E. W. Peterson. Uneventful menopause. Ten normal labors and one miscarriage. Admitted to the Post-Graduate Hospital July 16, 1912.

History.—Eleven years previously she had a sudden attack of pain in the right lumbar region, radiating downward to the bladder. This lasted for a day or two, and she passed some gravel and had moderate hematuria. There was no similar trouble until three months ago when she had a recurrence of the attack of eleven years ago. Since that time she has had frequent and urgent urination, and at times sudden cessation of the urinary flow, before the bladder was empty. She has noticed that the urine is turbid and contains enough blood to discolor it slightly. In the past three months she has had much pain in the right lumbar region.

Examination.—Radiographs were made, and as they were not very good, no shadows of stone were seen. At the time patient called I did not see these radiographs and accepted the statement that they were negative for stone. There was nothing to be palpated in the kidney regions. Vaginal examination showed a hard mass on the right side of the bladder. The catheterized specimen of the urine showed a large amount of pus and some blood. Cystoscopy: In the region of the right ureter was seen a mass about the size of a pigeon's egg, with bullous edema on the periphery, that was taken to be a flat-based papilloma and, because of the induration as felt through the vagina and the bullous edema was regarded as in all probability malignant.

Treatment. — The mass described above was fulgurated on July 20 with the D'Arsonval current, and again three days later. On examination a week after the second treatment, I was surprised to see protruding from the portion of the supposed tumor over the part fulgurated a large, black, rough stone. I suggested to the patient that she come into the hospital and allow me to remove the stone. The procedure I had in mind was to give her an anesthetic, put her in the knee-breast posture and through a No. 12 or 14 Kelly endoscope deliver the stone into the bladder by cutting open the vesical end of the ureter; then, to crush the stone with a lithotrite, and wash away the fragments.

The patient became frightened, and did not return. I wrote her to call on me, and she did so on Jan. 31, 1913. At this time she stated that she had had a number of attacks of lumbar pain since I saw her last, and one quite recently. Cystoscopy showed two stones almost the size of pigeon's eggs free in the bladder. The orifice of the right ureter was about the size of a lead-pencil. The mass that had appeared like a papilloma had disappeared.

An unsuccessful attempt was made to crush these stones with a lithotrite under local anesthesia. I directed that she have radiographs made of the whole urinary tract, as the frequent attacks of right renal pain indicated the possible presence of other stones in the kidney or ureter. After this the patient again went from under my attention and I have heard nothing further from her.

There are several noteworthy features in this case. The first is the large size of the stones that had come down the ureter. I do not think there was any increase in size of the stones after their escape into the bladder, as the appearance was the same, and neither was larger than the estimated size of the one seen just after the fulguration. Second, it is very easy to mistake such a condition for a flat-base papilloma. In all cases in which a supposed growth is situated over the vesical orifice of the ureter, and the meatus is not to be seen, the thought of stone should be entertained. In such instances a good radiograph of the lower end of the ureter will clear up the diagnosis. Third, where haste is not necessary, on account of symptoms due to ureteral obstruction, fulguration of the bladder over the stone offers a simple and bloodless method of releasing these stones. It takes about a week for the fulgurated tissue to slough away and let the stone into the bladder.

393 West End Avenue.

BURSTING RUPTURE OF THE STOMACH OF EXTRAORDINARY EXTENT

JOHN D. SINGLEY, A.M., M.D., PITTSBURGH

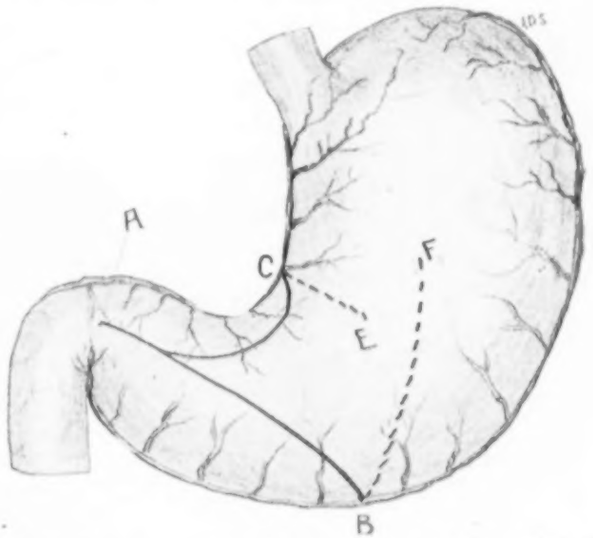
A somewhat thorough search of the literature leads me to believe that the case herewith reported is unique in the extraordinary extent of the rupture.

Patient.—B. M., aged 23, iron-worker, a large, well-formed, muscular man, was injured at 10 p. m. by having a large casting fall on him, striking his upper abdomen. He had eaten nothing after 6 p. m. When admitted to St. Margaret's Hospital at 10:30 p. m., he was in profound shock with a pulse of 136, temperature 96, respiration 26 (costal in type), skin relaxed and leaking. With appropriate treatment the pulse came down and improved in quality. There was no external evidence of trauma. The abdomen was flat in general but slightly full in the epigastrium. Percussion elicited dulness from the pubes to the umbilicus and in both flanks. There was no peristalsis. A doubtful history was obtained of the patient's having vomited blood and of his having passed some by rectum.

Operation.—A diagnosis of rupture of abdominal viscera, probably stomach, intestine or liver, with severe hemorrhage, was made and the abdomen opened through the upper right rectus at 1 a. m. After evacuating an enormous quantity of fluid and clotted blood, the stomach was found widely torn. Owing to the extent of the tear some difficulty was encountered in determining the proper relations of the torn margins. A glance at the accompanying illustration will indicate better than words can describe the enormous extent of the rupture. The viscus was completely torn across in an irregular manner with the exception of about 1½ inches (between E and F) of the posterior wall. The gastric artery at C and the gastro-epiploic artery at B were torn across, the rents extending into the gastrohepatic omentum above and the gastrocolic omentum below.

Treatment and Course.—The margins of the stomach wound were brought together with continuous inverting sutures of catgut and linen and the omental wounds closed with catgut, leaving sufficient space in the gastrohepatic omentum for the insertion of a split rubber tube with wick. A cigarette drain was placed in contact with the anterior and lower portion of the stomach. No stomach contents that could be recognized were found in the abdomen. The patient never rallied from the shock of hemorrhage and operation and died at 8 a. m.

Remarks.—Considering the lines of rupture, one is forced to conclude that the stomach burst at the moment of impact much as does a paper bag when inflated and struck. No such



Solid lines AB and AC, lines of rupture on anterior surface of stomach; dotted lines CE and BF, lines of rupture on posterior surface of stomach. Portion of posterior wall between E and F only part of circumference remaining intact.

rupture could possibly be produced by crushing force between the spine and the traumatizing agent.

812 North Highland Avenue.

A NEW BOTTLE-HOLDER FOR FEEDING BABIES

A. C. SOPER, JR., CHICAGO

An adjustable bottle-holder for institutions caring for nursing infants has been devised on the lines of one first made by Dr. John A. Hornsby, of the Michael Reese Hospital. It is intended to lighten the work of nurses who must care for four or more bottle-fed infants at the same time, and to give the baby a better chance to feed slowly and steadily. We all know that babies when fed on the maternal breast seldom nurse uninterruptedly, but often stop for a period, look around, and then begin again. The nurse who holds the bottle at the bedside or has the baby on her lap is always rushed with work and is likely to be impatient for the baby to finish, and will not let it stop for an instant, but keeps pushing the nipple into the mouth until all is finished. This rapid feeding is one of the prime sources of indigestion, and often causes the baby to vomit. Also, bottles left on a pillow or blanket by the baby's head often roll away unnoticed by the nurse, who, coming around later must perhaps reheat the milk. The food is often spilled in this way and the baby goes hungry.

Fig. 1.—A bottle holder to fasten on the crib. Made by Truax, Greene and Co., Chicago.

This holder, being inexpensive and easy of adjustment, should find a place in all institutions that care for infants, and also in many homes.

4557 Evanston Avenue.

CASES ILLUSTRATIVE OF (1) FRACTURE OF CARPAL SCAPHOID WITH LUXATION OF SEMILUNAR, (2) FRACTURE OF CARPAL SCAPHOID WITH PALPABLE DEFORMITY

P. G. SKILLERN, JR., M.D., PHILADELPHIA
Fellow of the Philadelphia Academy of Surgery

Close study of injuries about the wrist renders the casual diagnosis of "sprain" or "contusion" less and less tenable. I have pictured and described[1] four cases of sprain—or tear-fracture, including one of the wrist, which might readily have been diagnosed and treated as "sprain" or "contusion," but which demanded the same careful immobilization as though gross fractures. So, too, fractures of the bones of the carpus, of which that involving the scaphoid is the commonest, may readily be overlooked owing to their small size and firm ligamentary interunion, factors which mask or withhold the usual signs of fracture. That these fractures can be recognized, that their frequency is greater than statistics indicate, and that many cases of otherwise unaccountable crippled wrist would not occur, these two cases illustrate. They both were seen by me in the surgical outpatient department of the University Hospital, service of Dr. B. A. Thomas, and for the exceptionally clear skiagrams I am indebted to Dr. Henry K. Pancoast. In both instances the diagnosis was made before search by x-rays by simple attention to the anatomic conditions.

Fig. 1.—Fracture of scaphoid and luxation of semilunar. Note synostosis of tuberosity of scaphoid with tip of radial styloid.

Fig. 2.—Lateral view of Figure 1. Note palmar displacement of semilunar and approximation of os magnum to radius ("shortening of carpus") to occupy the space vacated by the semilunar.

CASE 1.—E. H., white, male, inspector, aged 36, had a street accident injuring right wrist; mechanism unknown. The case was treated in another hospital for two weeks as a "bad sprain," skiagram taken at the time being declared negative. Following this wrist was crippled, flexion and extension being very limited, and patient had pain in joint on the slightest motion. Tendons were not adherent. Examination showed two signs which sufficed for diagnosis, tenderness in the snuff-box with hand adducted and a bony projection into the flexor tendons in the middle of the front of the wrist. There was no puffiness, ecchymosis, crepitus or preternatural mobility. The localized tenderness in the snuff-box indicated fracture of scaphoid, while the prominence anteriorly, with a corresponding gap on dorsum between os magnum and radius, was pathognomonic of coincident luxation of semilunar, which combination is second in order of frequency to fracture of scaphoid alone, depending solely on the direction and extent of the irritating force. Skiagram (Fig. 1) showed displacement of lower end of proximal fragment toward ulnar side and in front of os magnum and also elongation in vertical diameter of semilunar (compare with same bone in Figure 3). In the lateral view (Figure 2) the latter appears beautifully clear as a three-quarters moon, with the characteristic displacement forward to just below the anterior articular edge of radius. There is shortening of carpus by approximation of os magnum to radius. Owing to the long lapse of time (seven months) since the injury, but one method of treatment was indicated, removal of the semilunar with both fragments of scaphoid. Pain is relieved and motion increased.

CASE 2.—A. J., white, male, engine cleaner, aged 31, fell a week previously, striking right wrist. Examination revealed a tender prominence occupying and filling the snuff-box just below the styloid of the radius. Diagnosis was fracture of scaphoid. Skiagram (Figure 3) revealed the distal fragment (tuberosity) so shifted as to occupy and fill in the interval between the tip of the radial styloid and the trapezium. Patient refused manipulative or operative treatment. The distal fragment should have been ablated.

Isolated fractures of the scaphoid are *not* to be treated by massage and passive motion. This bone is but feebly capable of osteogenesis and is constantly bathed by the synovial fluid, the amount of which would only be increased by massage and passive motion, thus adding fuel to the fire.

The proper treatment in early cases is immobilization for a period of about four weeks. If at the end of this time there is still no union, or if the case has been untreated, or has been treated by massage and motion with resultant non-union, the fragment (ordinarily the proximal) is to be ablated through a half-inch incision between the extensor communis digitorum and extensor carpi radialis brevior tendons.

Fig. 3.—Fracture of scaphoid with deformity. Note displacement of separated tuberosity below and just external to the tip of the radial styloid, where it can be distinctly felt. After operation in this case, the patient secured complete restoration of function.

The functional result obtained in those cases in which the patients have received this method of treatment is usually perfect.

241 South Thirteenth Street.

1. Skillern, P. G., Jr: Ann. Surg., February, 1913, p. 289.

A SCLEROCORNEAL TREPHINE

BROWN PUSEY, M.D., CHICAGO

In my first use of the Stephanson trephine I felt the need of the shoulder attachment as a factor of safety. I used this attachment in several operations and in two of them found that the shoulder interfered with the application of the cutting surface at the sclerocorneal junction because of the fold of the turned-down conjunctival flap.

I then used the instrument without the shoulder attachment, but there is some danger in this.

To avoid these troubles (troubles at least for the beginner in this very promising operation), I have had made a trephine with a barrel of even diameter for 0.75 mm. from the cutting edge, then a slight flare, as shown in the accompanying pic-

A sclerocorneal trephine.

ture. This makes a very safe and very efficient instrument; indeed the instrument has proved so satisfactory that I venture to call attention to it.

7 West Madison Street.

SHELF FOR RECTAL AND VAGINAL OPERATIONS

HENRY F. GRAHAM, M.D., BROOKLYN

In many rectal and vaginal operations a shelf conveniently placed will save much time when the operator finds it necessary to lay down and pick up his needle-holder, scissors, thumb-forceps, etc., frequently.

This device weighs about 3½ pounds and hooks on the lower end of the operating-table after it has been dropped. Thumb-screws permit of adjustment near to the table or farther away.

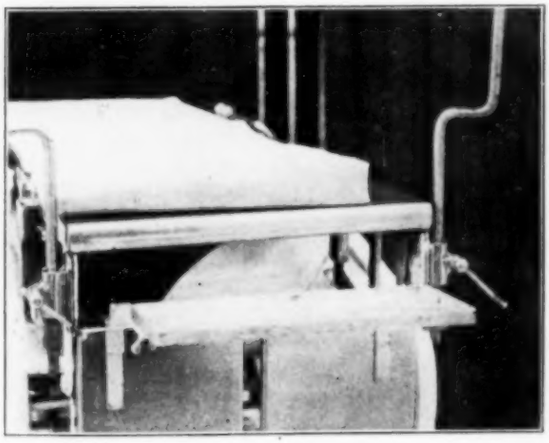


Fig. 1.—Shelf for rectal and vaginal operations.

After this had been made, I learned that Dr. E. B. Cragin of New York had used a similar device. In a letter he informs me that he has been using a shelf for about two years but has never described it in the journals.

LONGITUDINAL FISSURED FRACTURE OF THE LOWER END OF THE RADIUS

JOSEPH LEWI BENDELL, M.D., ALBANY, N. Y.
Instructor in Surgery, Albany Medical College; Attending Dispensary Surgeon, Albany Hospital; Assistant Attending Surgeon, South End Dispensary

Few examples of longitudinal, or fissured, fracture of the lower end of the radius are on record. Cotton[1] speaks of only three specimens as constituting the entire evidence. Stimson,[2] who refers to the lesion as an incomplete Colles' fracture, has seen only one skiagram of the condition.

The condition was first described by Bigelow,[3] and although there are sundry references in the literature, published radiographic findings seem to be limited to Parrish's recent article.[4]

The latter, so far as I know, is the only published report (except this one) with roentgenographic illustration of the lesion.

REPORT OF CASE

W. R., aged 31, truck-driver, Sept. 19, 1912, fell from the seat of his truck, striking his right wrist against the pavement. At the time of the accident he paid but slight attention to the injury, although he suffered some pain in the wrist, and

Roentgenogram of longitudinal fissured fracture of lower end of radius.

there was a moderate degree of limitation of motion. Shortly following, he was conscious of the fact that the wrist was swollen. A few days later, still suffering from the above-described symptoms, he decided to consult a physician. The latter, suspecting a fracture, applied a temporary dressing.

One week following the accident, the patient came under my care. The wrist at this time presented a moderate degree of edema, was sensitive to pressure, and manipulation caused pain. Deformity was, however, entirely absent.

Having in mind the possibility of a Colles' fracture without the presence of the characteristic deformity, I advised the use of the *x*-ray. A longitudinal fracture of the lower end of the radius of the fissured type, was revealed, as here shown.

1. Cotton: Dislocations and Joint Fractures.
2. Stimson: Fractures and Dislocations.
3. Bigelow: Boston Med. and Surg. Jour., 1858.
4. Parrish, Robert C.: Longitudinal Fracture of the Lower Extremity of the Radius, THE JOURNAL A. M. A., Jan 11, 1913, p 123.

A plaster-of-Paris cast was applied to the wrist and lower arm for a period of ten days, at the end of which time passive motion and massage were instituted, and a roller bandage substituted for the cast.

The patient was discharged on October 20, and at the present time suffers from no disability.

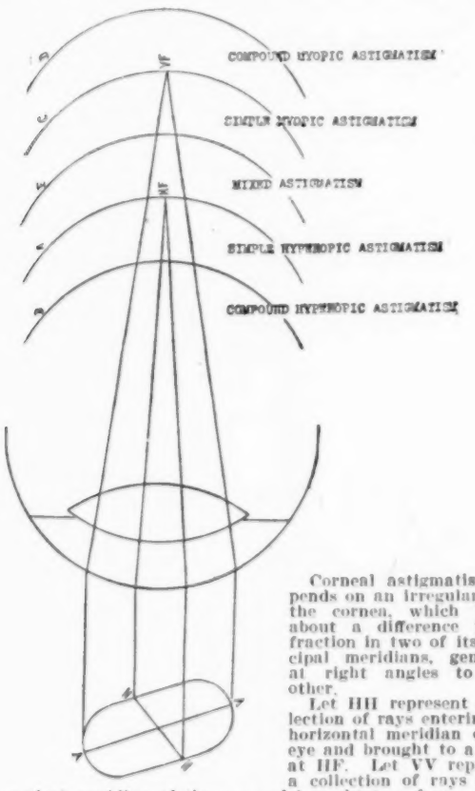
The above case is recorded, not because of its importance from a clinical point of view, but because of its rarity and its absence from the surgical literature. Doubtless, the fracture occurs with greater frequency than we might be led to believe, since absence of deformity and lack of definite symptomatology lead the attending physician to treat the injury as sprain rather than fracture.

178 State Street.

A DIAGRAM FOR TEACHING THE VARIETIES OF REGULAR ASTIGMATISM

SIDNEY L. OLSHO, M.D., PHILADELPHIA
Instructor in Ophthalmology, Jefferson Medical College

With the accompanying diagram, I have been able to make the subject of astigmatism a little clearer to students. So far



Corneal astigmatism depends on an irregularity of the cornea, which brings about a difference in refraction in two of its principal meridians, generally at right angles to each other.

Let HH represent a collection of rays entering the horizontal meridian of the eye and brought to a focus at HF. Let VV represent a collection of rays entering the vertical meridian of the eye and brought to a focus at VF. Observe the interval between these foci. The kind of astigmatism present may now be said to depend on the length of the eyeball.

If the retina be situated as far back as A, we find one meridian of the eye (HH) emmetropic and one meridian (VV) hyperopic. Result: simple hyperopic astigmatism.

If the retina be situated at B, we find both meridians hyperopic, but the vertical meridian (VV) more so than the horizontal meridian (HH). Result: compound hyperopic astigmatism.

If the retina be situated as far back as C, we find one meridian (VV) emmetropic and one meridian (HH) myopic. Result: simple myopic astigmatism.

If the retina be situated at D, we find both meridians myopic but the horizontal meridian (HH) more so than the vertical meridian (VV). Result: compound myopic astigmatism.

If the retina be situated at E, we find one meridian (VV) hyperopic and one meridian (HH) myopic. Result: mixed astigmatism.

I have not been able to find a like diagram in any text-book. The nearest approach to it is one by Dr. Edward Jackson. I offer this with an elementary legend, which approaches the subject in a brief way.

1632 Walnut Street.

Therapeutics

TRACHOMA

This disease of the eyes is becoming of more and more importance as it becomes more and more widespread throughout our country. Therefore a brief summary of the elaborate presentation of the subject by Dr. Clark[1] of Evansville, Ind., will be valuable.

In 1897 the Secretary of the Treasury declared trachoma a dangerous contagious disease, and denied an immigrant afflicted with it entrance to this country, because of the discovery that the disease was being introduced and disseminated by immigrants. It seems to be undisputed that no country is free from the ravages of the disease, the history of which goes back to ancient times, and that no race is immune from it and no age exempt, except the very young. Dr. Clark tells us that in young children the conjunctiva does not have sufficient adenoid tissue to give the disease an opportunity to develop.

Dr. Clark states that in spite of all the bacteriologic investigations, the cause of trachoma is not yet known, the specific germ has not yet been discovered. It has been clearly shown, however, that in most cases of trachoma there is a mixed infection. The disease occurs in groups, in localities, in houses, in factories, and in schools, and is spread by contact or by contamination with articles like common towels, which are handled conjointly by the afflicted patient and his fellows.

The inflammation is located in the lymphoid tissue in the meshes of the connective tissue of the conjunctiva, and is "an enormous lymphoid infiltration with cells aggregating into masses, forming papillae, which, after receiving a vascular supply, degenerate, rupture and undergo cicatrization with the formation of the characteristic scar tissue of trachoma."

Clark believes that a more or less acute inflammation always precedes this chronic process. The acute symptoms are "those of a severe conjunctivitis with lacrimation, photophobia, pain," and some swelling of the lids. He finds the ocular conjunctiva injected, and more or less chemosis present. The palpebral conjunctiva and the fornix are congested and turgid, and the follicles are swollen. Eversion of the lid causes pain. More or less purulent discharge develops and papillae form, varying in size, depending on the situation in the conjunctiva. The color of these papillae varies according to the looseness of the conjunctiva, and they may amalgamate, forming masses or folds. The next stage, which occurs after a longer or shorter time, is that of scar-tissue formation; at this stage the secretion diminishes and the ocular congestion and photophobia cease. Still later the scar tissue begins to form in the region of the aggregations of the papillae, and with the progress toward cicatrization the so-called granulations of trachoma become separated into bands or islands, a very characteristic appearance when the inflammation is well advanced toward spontaneous recovery. This scar tissue is less abundant in the lower than in the upper lid. Its formation soon causes a lagging of the lids on movement, and later may cause ptosis. The course of trachoma is chronic, and, although there may be varying degrees of intensity of the inflammation and therefore a variation in the appearance of the conjunctiva, Clark believes that trachoma is always the same, and that to describe different types is only to cause confusion.

1. Clark, T.: Trachoma, with Especial Reference to the State of Minnesota, Journal-Lancet, March 15, 1913, p. 159.

Pannus, which occurs in from 30 to 50 per cent. of the cases, is probably caused by irritation from the granulations, or it may be a complication of trachoma.

The contraction due to the cicatrization of the inflamed tissue often causes more or less deformity and distortion of the lids. An unhealed or persistent pannus or the scarring from ulcers may cause blindness, and Clark says that about 90 per cent. of all cases of trachoma result in damaged vision. This damage ranges from a slight refractory error to complete loss of vision.

As previously stated, the diagnosis cannot be made from the discovery of a specific germ; therefore the disease must be diagnosed by inspection. The pathognomonic signs are hyperplastic granulations associated with scar tissue. Trachoma must be differentiated from follicular conjunctivitis. In this inflammation there is follicular hypertrophy and not a hyperplasia. There is no scar-tissue formation and no pannus, and in chronic cases there may be chalky deposits, a condition which Clark says he has never seen in trachoma. Follicular conjunctivitis, moreover, is not contagious, and may exist for years without the occurrence of any corneal inflammation. Clark believes that gonorrheal ophthalmia never becomes chronic, and therefore a chronic inflammation of the conjunctiva could never be due to the gonococcus.

The treatments recommended for this inflammation are legion. The important things to consider, as outlined by Clark, are the diminishing of the acute inflammation, the hastening of the absorption of the inflammatory products, and the prevention of scarring or deforming cicatrization. In acute inflammation he believes that some silver preparation or the glycerite of tannin, with or without cold applications, is valuable. If the conjunctiva is pale, with granulations and scant secretion, he would use stimulation with the copper stick. Often the stimulating treatment should be very mild. He does not approve of some of the severe treatments that have been recommended. He approves of expression of the trachomatous follicles with roller forceps, followed by the application of astringents. This treatment should be applied, of course, only when the inflammation is chronic, and not when there is acute inflammation. In some instances scarifying of the granular tissue should be done before expression is used. Every follicle that is diseased must be cleaned, else reinfection will occur; but the greatest gentleness must be used lest needless laceration be done. Local anesthesia may be needed. The treatment after these operative measures is cold applications, and occasional eversion of the lid to prevent adhesions and the formation of pockets. Subsequently it may be wise to apply the copper stick for stimulation. Other operative measures are well described by Crigler.[2]

The general condition of the patient should, of course, never be forgotten. Anything that tends to improve the hygiene, nutrition and general welfare of the patient will aid in helping any chronic inflammation. The treatment of pannus can be decided on only by expert advice, individualizing each patient.

The seriousness of trachoma, its contagiousness, the knowledge that thousands of would-be immigrants are waiting to come to America if restriction of this disease is removed, the amount of it already in this country, and, especially, its concentration in certain localities mean that measures for its prevention should be inaugurated by every state, city and town where the disease has been discovered. Neglect of the different boards of health or health officers to take measures to prevent the spread of this disease becomes more serious every year as more foreigners come, with the attendant crowding and ignorance in regard to ordinary cleanliness. Poverty, crowding, dirt and articles used in common tend to spread this infection rapidly. The time a given person with the disease may continue to disseminate it is not known, but is probably as long as the adenoid tissues of the conjunctiva are diseased.

While the number of persons having trachoma may be diminishing in some of our larger cities where both the government and the local authorities are alert to the danger of the disease and to the segregation necessary, other cities and communities should pass such ordinances as would cause every case of trachoma to be reported. School children should be inspected for this disease. Factories should also be inspected, and where the disease is discovered the owners should take measures to prevent its spread and to eliminate it if possible. A person with trachoma should be isolated and treated until he is well. A child who is discovered to have trachoma and is banished from school should be followed to its home by a visiting nurse or some inspector from the board of health to insure that the child does not spread contagion in its own home. A medical inspector should also examine all other members of the family to note if there are other cases of the disease.

Clark urges that school wash-rooms should have faucets for running water which are controlled by foot-pressure, so that the hands need not touch the faucets. The common towel should be abolished with the common drinking-cup. These rules for cleanliness apply also to factories, hotels, office buildings and all public institutions.

2. Crigler, L. W.: Trachoma, Its Etiology and Treatment, THE JOURNAL A. M. A., March 30, 1912, p. 925.

Special Article

BACTERIAL VACCINE THERAPY: ITS INDICATIONS AND LIMITATIONS*

(Continued from page 1461)

CLASSIFICATION OF BACTERIAL VACCINES

Vaccines may be classified as *autogenous* and *stock vaccines*. Each of these classes is susceptible of further subdivision.

AUTOGENOUS VACCINES

Autogenous vaccines are derived from bacteria taken from the patient in whose treatment they are to be used. Autogenous vaccines are usually simple, being derived from a pure culture of a single causative organism derived from the affected tissues. In certain cases, however, differentiated mixed vaccines are employed. In some cases of mixed infection two or more species of bacteria are shown by bacterial examination to be associated in the diseased condition. These species are isolated, grown in pure culture, and converted into vaccines, and these vaccines are combined in dosage proper to the particular species at the moment of inoculation.

* This series of articles has been prepared under the direction of a committee appointed for the purpose by the Council on Pharmacy and Chemistry of the American Medical Association. The committee consists of Drs. Ludvig Hektoen, Chicago; David L. Edsall, Boston; John Howland, Baltimore; Reid Hunt, Washington, D. C., and Albert P. Ohlmacher, Detroit.

An undifferentiated mixed vaccine has been employed by cultivating all the organisms obtained from the pus or other diseased product without isolating and securing the bacteria in pure culture. This method has been urged as an emergency measure in case of rapidly spreading infection, like a traumatic cellulitis or puerperal sepsis, but on account of its great uncertainty and crudeness is to be condemned entirely.

STOCK VACCINES

A vaccine made in bulk and afterwards subdivided to obtain proper dosage is called a "stock vaccine." All commercial vaccines are of the stock variety, since, even in the final single marketed doses, they are derived from an original or stock suspension prepared and kept in the manufacturer's laboratory.

Stock vaccines may be single, containing only one variety of bacterium, or mixed, containing two or more varieties.

Polyvalence.—To those stock vaccines composed of two or more subspecies or varieties of a particular bacterial species, the term "polyvalent" has been applied. The idea is that polyvalent vaccines possess a wider range of therapeutic affinity than ordinary. The device of polyvalent stock vaccines which fit the varieties of a given bacterial species is offered as a substitute to remove the necessity of a culture with correct bacteriologic diagnosis, and to relieve the physician from making an autogenous or personal vaccine.

The word has been variously applied. Stock staphylococcus vaccines with a mixture of the species albus, aureus, citreus, etc., are by some designated as polyvalent. Again, a stock *Staphylococcus aureus* vaccine, if made from cultures secured from different lesions as boils, phlegmon, osteomyelitis, etc., would be classed as polyvalent. In other bacterial species in which variation is supposed to exist in so-called races or strains, as streptococci, pneumococci and typhoid bacilli, the effort to make polyvalent stock vaccines of any one of these consists in combining suspensions of a number of cultures secured from different individuals and different lesions.

The very frequent failure to obtain satisfactory therapeutic results with stock vaccines of a single species, race, group or strain prompted the production of those called polyvalent vaccines. Like mixed vaccines they represent an effort to hit a minute and possibly uncertain target with a widely spreading charge of therapeutic ammunition. There are no satisfactory data to prove the superiority of any of the numerous kinds of polyvalent stock vaccines over the corresponding ones of a single source. They serve simply to complicate vaccine therapy, and to engender a false sense of security on the part of physicians using them.

MIXED STOCK VACCINES

Mixed stock vaccines may be divided into those which are permissible and those which are objectionable.

Mixtures of stock vaccines are possibly permissible under certain circumstances. These circumstances are that a preliminary bacteriologic diagnosis has been made by which the identity of the species in a mixed infection has been ascertained, and that the mixture of the corresponding bacteria is made at the time of inoculation. Given the case of a cellulitis with streptococci and staphylococci identified by preliminary culture, or possibly by smears, if one had ready to hand a standardized stock vaccine of staphylococcus and of streptococcus, a portion of each to represent the desired dose could be mixed and injected, assuming that an acute process like this is suitable for vaccine therapy. For a reason to be dwelt on later, it is necessary to qualify somewhat the rationale of this procedure, which would prove successful only in case one were so fortunate as to hit on a race or strain of streptococci corresponding to that in the streptococcus vaccine.

Objectionable mixed stock vaccines include practically all the mixed vaccines now on the market. They are not even corresponding, in a sense that a preliminary bacteriologic diagnosis has established the identity of the bacterial species involved in the mixed infection under treatment. For the most part, they are to be used by the unscientific procedure of guesswork. The physician is expected to assume that two or more pathogenic bacteria contained in the mixed stock vaccine are the active agents in the case which he is treating. Having reached this assumption he discharges into his patient a mixture of bacteria including the ones whose presence is suspected, and several others, for these mixed vaccines are generally very liberal as to bacterial species entering into their composition.

USE OF AUTOGENOUS VACCINES

Theoretically, autogenous vaccines are the agents *par excellence* of vaccine therapy. By their use antibodies of precise specificity are aroused, and specificity is found to be a predominating characteristic of antibodies as further progress is made in their study. In theory, therefore, the use of autogenous vaccines provokes the formation of exactly that class of immunizing substances best suited to combine with the bacteria engaged in the disease process, or to combine with and nullify the poisons elaborated by such bacteria. This theoretical assumption of the superiority of autogenous vaccines is sustained in practice. Instead of adding a heavier burden to the individual's immunizing mechanism, already taxed in its struggle against the invading bacteria, these bacteria reintroduced as autogenous vaccines, if successful, stimulate further therapeutic immunizing responses. The experience of expert bacteriotherapists attests to the correctness of this view. This is not to say that failure is impossible. It is still far too common, even in the practice of the most experienced and best-trained workers to justify any other than a most conservative attitude; but therapeutic success, if at all attainable, follows the use of correctly prepared and properly administered autogenous vaccines, while failure, if resulting from these procedures, certainly would not be averted by using impersonal or stock vaccines. In other words, the experience of the best-qualified specialists in vaccine therapy demonstrates that the most uniform and most satisfactory therapeutic results follow the use of autogenous bacterial vaccines. Autogenous vaccine therapy, having such strong claims for superiority, should be more generally adopted. The claims for such general adoption may be summarized as follows:

1. Any result that is possible in therapeutic immunization can be secured by autogenous bacterial vaccines.
2. Therapeutic results otherwise unattainable may follow the proper use of autogenous vaccines.
3. Autogenous vaccine therapy makes prerequisite a bacteriologic diagnosis, the only really scientific method of approaching the treatment of an infection.
4. If carried out in detail by the practitioner, it assures the possession of a certain skill and experience without which vaccine therapy is merely an empiric procedure.

5. It assures a personal, intimate touch between the practitioner and the patient.

6. It assures the independence of the practitioner from commercial vaccine interests.

7. It elevates vaccine therapy to its proper level of a special practice in the hands of thoroughly qualified physicians.

OBJECTIONS TO AUTOGENOUS VACCINES

Certain objections to autogenous vaccines have been raised by good authorities. One of these is that in cases of rapidly progressing infections the time required to produce a vaccine entails a serious loss. In the hands of an expert, however, the first dose of autogenous vaccine can be prepared in from twelve to twenty-four hours after the culture-medium has been inoculated, in case the infection is due to the more usual pyogenic organisms. Therefore, objections to lost time become less serious, while there is the immense advantage of having available the precise organism or mixture of organisms causing the infection. Should the case be one with the more unusual organisms, it is altogether improbable that a stock vaccine would fit it. A more weighty objection concerns those bacterial species which are difficult to secure in culture or which are slow in growth, like the gonococcus, acne bacillus, influenza bacillus and tubercle bacillus.

Here one may be compelled to resort to stock vaccines while effort is being made to secure the autogenous one in case a culture is procurable; and it becomes a question of stock vaccines or none at all in those chronic infections like some gonorrheal rheumatisms, in which the germ is inaccessible. In case of the tubercle bacillus practically all workers resort to stock vaccine (tuberculins).

(To be continued)

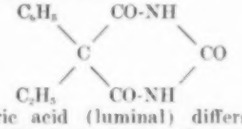
New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES."

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT, SO FAR AS KNOWN, IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

LUMINAL. — Phenyl-ethyl-barbituric acid. — Phenyl-ethyl-malonyl-urea.—Luminal is phenyl-ethyl-barbituric acid, 2,4,6-trioxy-5-phenyl-ethyl pyramidin,



Phenyl-ethyl-barbituric acid (luminal) differs from diethyl-barbituric acid (veronal) in that one ethyl group (C_2H_5) has been replaced by one phenyl group (C_6H_5).

Luminal is a white, odorless, slightly bitter powder. It is almost insoluble in cold water, slightly soluble in hot water and readily soluble in alcohol, ether and chloroform, and in alkaline solutions. It crystallizes from boiling water in lustrous leaflets, and is precipitated unchanged by acids from its alkaline solutions. It melts at 170°-172° C.

If about 0.3 Gm. of luminal be shaken for a short time with 1 Cc. of normal sodium hydroxide and 5 Cc. of water, and the mixture filtered, the filtrate will yield white precipitates on the addition of mercuric chloride and of silver nitrate solutions.

If about 1 Gm. of luminal be boiled for five minutes in 10 Cc. of a 50 per cent. solution of sodium hydroxide, ammonia will be evolved.

If about 1 Gm. of luminal be dissolved in 5 Cc. of normal sodium hydroxide and the solution heated for four hours on a boiling water bath, the evaporated water being replaced, crystals of phenyl-acetyl-urea will separate on cooling. When recrystallized from dilute alcohol these crystals melt at 147° C.

If about 0.1 Gm. of luminal be dissolved in 1 Cc. concentrated sulphuric acid, the solution should be colorless.

If about 0.1 Gm. of luminal be incinerated, no weighable residue should remain.

Actions and Uses.—It is claimed that the introduction of the phenyl group increases the hypnotic power of luminal (phenyl-ethyl-barbituric acid) over that of veronal (diethyl-barbituric acid).

Luminal is said to produce sleep in the cat and dog with a satisfactory range between the effective and lethal doses, affording a deep quiet sleep, without injury to the respiration or circulation. Very rarely a period of excitement precedes sleep.

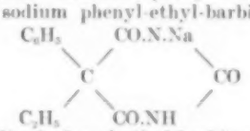
It has a sedative action on respiration, lessening the frequency of breathing, although the volume of each respiration is increased. It kills by respiratory paralysis. It is eliminated by the kidneys, a certain portion being probably decomposed in the organism. No injury to the kidneys nor gastric disturbances have been observed.

Luminal is claimed to be a useful hypnotic in nervous insomnia and conditions of excitement of the nervous system.

Dosage.—From 0.2 to 0.3 Gm. (3 to 5 grains) increased if necessary to 0.8 Gm. (12 grains). A maximum dose of 0.8 Gm. (12 grains) should not be exceeded. Smaller doses are sometimes efficient.

Manufactured by E. Merck, Darmstadt, Germany (Merck & Co., New York). U. S. patent No. 1,025,872 (May 7, 1912; expires 1929). U. S. trademark No. 87,327.

LUMINAL-SODIUM. — Sodium phenyl-ethyl-barbiturate.—Luminal-sodium is sodium phenyl-ethyl-barbiturate,



the mono sodium salt of phenyl-ethyl-barbituric acid.

Luminal-sodium is a white, crystalline, hygroscopic powder, readily soluble in water. On long standing or prolonged boiling of the aqueous solution one molecule of carbon dioxide is liberated and phenyl-ethyl-acetyl-urea is precipitated. Its aqueous solution is alkaline to litmus.

If luminal-sodium be incinerated the residue should respond to tests for sodium.

If an aqueous solution of luminal-sodium be treated with a solution of potassium pyro-antimonate a white precipitate will be formed.

Luminal-sodium further responds to the tests given under luminal (which see).

Actions and Uses.—See luminal.

Dosage.—For hypodermic injection luminal-sodium is used in the form of a 20 per cent. solution, prepared by dissolving the salt in boiled and cooled distilled water; 2 c.c. (30 minims) of the solution contain 0.4 Gm. (6 grains) of luminal-sodium. The dose of luminal-sodium is 10 per cent. greater than that for luminal.

Luminal-sodium may be given hypodermically in doses of 0.1 to 0.3 Gm. (1½ to 5 grains).

Manufactured by E. Merck, Darmstadt, Germany (Merck & Co., New York). U. S. patent No. 1,025,872 (May 7, 1912; expires 1929). U. S. trademark No. 87,327.

STREPTOCOCCUS VACCINE (See N. N. R., 1913, p. 226).

Lederle Antitoxin Laboratories, New York City. (Schieffelin and Co., New York.)

Streptococcus Vaccine (Polyvalent).—Marketed in vials and in syringes containing respectively 50 million, 100 million, 200 million and 400 million killed streptococci.

TYPHOID VACCINE (See N. N. R., 1913, p. 227).

Lederle Antitoxin Laboratories, New York City. (Schieffelin and Co., New York.)

Typhoid Vaccine.—Marketed in vials and in syringes containing respectively 100 million, 250 million, 500 million and 1 billion killed bacteria.

Typhoid Vaccine (For Prophylactic Treatment).—Marketed in vials and in syringes, each package containing 3 doses, the first dose containing 500 million killed bacteria, while the second and third dose each contain 1 billion killed bacteria.

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SATURDAY, MAY 17, 1913

RESPIRATION AND THE CIRCULATION

The movements of respiration are commonly described as having a distinct influence on the circulation by acting as an auxiliary to the heart in accelerating the blood-stream. There is assumed to be a constant aspiration of blood from peripheral parts into the thorax. The heart is portrayed as thus being better supplied with blood during inspiration than expiration, thereby tending to raise the arterial blood-pressure. The inspiratory descent of the diaphragm is believed to increase the flow into the heart by raising the positive pressure in the abdomen, so that blood is pressed out of the abdominal veins and sucked into the heart and the thoracic veins. During respiration there also occur changes in the pulmonary capillaries whereby their capacity may be increased and the resistance they offer to the flow of blood will be diminished. The effects of the respiratory movements on the systemic blood-pressure are thus explained by the influence they exert on the lung vessels or lesser circulation.

These conventional views have not remained unchallenged. Lewis believes that the variations in pericardial pressure, that is, the direct influence of the thoracic movements on the heart, play a much more important part than changes in the pulmonary circulation in such phenomena as the production of the respiratory undulations in the blood-pressure. Indeed, he concludes that it is not possible to make any general statement as to the nature of the blood-pressure response to a particular respiratory act, the effect of the respiration varying according to the type of respiratory movement.

In the Yale Medical School, Drs. Henderson and Barringer[1] have critically reviewed the evidence for some of the current notions regarding the reputed rôle of the movements of respiration in assisting the heart to propel the blood-stream. This is commonly supposed to be particularly conspicuous and physiologically helpful during the hyperpnea attending muscular exertion. These investigators conclude, contrary to the familiar belief, that neither the augmented respiration nor other influences can induce the enormous systolic discharges at rapid rates of heart-beat that have been believed to occur during vigorous physical exercise. According to Henderson and Barringer, the utmost assistance that respiration can afford is the maintenance of a venous pressure sufficient to distend the right ventricle as rapidly as it relaxes and as fully as the duration of diastole allows — conditions without which the heart action becomes subnormal.[2] Contrary to the general opinion, these investigators further hold that the influences of the rhythmic changes of the negative pressure of the thorax on the thoracic veins, on the heart and on the pulmonary blood-vessels are in reality of no considerable importance in relation to the velocity and volume of the arterial blood-stream. Under normal conditions of venous supply the respiratory variations of arterial pressure are mainly due, they believe, to corresponding alterations in the heart-rate.

After hemorrhage or in circulatory shock, when the venous pressure is below normal and the heart is therefore acting with less than full efficiency, the auxiliary action of respiration may become more important. Forcible expiratory contractions of the abdomen may momentarily increase the venous supply to the right ventricle to such an extent that the output of the left ventricle is augmented to a more nearly normal volume. These newer theories, along with the designation of the failure of the venous supply to the right heart as the "critical factor" in so-called circulatory shock, deserve careful consideration. The latter phenomenon is quite distinct from the vasomotor failure and abolition of the peripheral resistance of the arterial system seen in the shock manifestations induced by section of the spinal cord.[3]

1. Henderson, Y., and Barringer, T. B., Jr.: The Influence of Respiration on the Velocity of the Blood-Stream, Am. Jour. Physiol., 1913, xxi, 399.

2. Henderson, Y., and Barringer, T. B., Jr.: The Relation of Venous Pressure to Cardiac Efficiency, Am. Jour. Physiol., 1913, xxxi, 352.

3. Henderson, Y., and Barringer, T. B., Jr.: Am. Jour. Physiol., 1913, xxxi, p. 362.

NEW ANALYSES OF HOT SPRING WATERS

Hot springs are found in many parts of the world. Where they are reasonably accessible they are frequently made a part of a "health resort" established to exploit the curative properties of the waters. The heating of the springs is probably accomplished by deep-seated waters which are converted by contact with heated masses in the interior of the earth into vapor. This ascends through fissures toward the surface, where it meets cold springs and heats them.

When it is remarked that "hot water is hot water anywhere," so that this feature of hot springs need not induce patients to travel away from home to obtain the benefits of thermotherapy, the enthusiasts for these health resorts assure us that the waters contain other features than the heat. In many cases chemical analysis has failed to reveal any unusual content of mineral constituents to account for the alleged therapeutic effects. This is true, for example, of the waters at Hot Springs in

Arkansas, where the government reports freely admit that the dissolved matter is low in amount. These waters, like those of some other deep springs, are radio-active; and in the absence of more convincing evidence along other lines the therapeutic value of the baths at the Arkansas Hot Springs is attributed to the radio-activity of the waters rather than to any mineral constituent. The use of the waters is, however, combined with so many other features of hydrotherapy, thermotherapy, dietary supervision and hygienic living that it must remain an open question whether in truth the waters *per se* have any specific curative virtues.

It is important to have full information regarding all the factors in connection with such resorts, so that an unbiased estimate of their real merits can be frankly made known. A recent report to the United States Geological Survey brings facts regarding the waters of the Breitenbush Hot Springs.[1] They are situated near Breitenbush Creek on the west slope of the Cascade Mountains in Marion County, Oregon. The valley of the Breitenbush is narrow, and the formations exposed are lavas of the Cascade Range series. More than sixty hot springs, in three general groups, lie along both sides of the stream for almost a third of a mile. A few cold springs, entirely different in character, are within the limits of the groups, but as they are normal for the region they are unimportant. All the hot springs have nearly the same temperature, and the manner of their grouping suggests a common origin. Reputed curative properties have been assigned to the various springs, and a crude "health resort" has been constructed. Many patients take the waters each year, and if the place were more readily accessible it would undoubtedly enjoy a large patronage. The government analyses now published show that the several hot springs are merely separate outflows from a common source. The water is characterized by a content of sodium chlorid of approximately 1.5 parts per thousand, resembling other "salt" waters; but it contains small amounts of silica, calcium, bicarbonates and sulphates. The report suggests that "minimum medicinal doses of both sulphates and carbonates might be obtained by drinking about 4 liters [1 quarts] of the water, but the disagreeable and even nauseating taste of the chlorids would make the drinking of that amount in one day a herculean feat. It is certain that any curative properties attributable to the mineral content are psychologic rather than physiologic." Without prejudice as to other therapeutic possibilities, of which the still problematic radio-active hypothesis may be one, the possession of authentic information regarding all such reputed health-giving agencies is greatly to be desired as an aid to rational critique and just appreciation. To seek light in this domain is not necessarily to deny the testimony of empiric clinical experience.

1. The data are given by W. VanWinkle in Jour. Ind. and Eng. Chem., April, 1913, p. 300.

ANTINEURITIC FOODS

The discovery that a disease (polyneuritis) similar in many respects to human beriberi can be induced in birds by a diet of polished rice has given a great impetus to the investigation not only of these analogous diseases, but also of the dietary antineuritic factors in general. The study of human cases involves large elements of chance and uncertainty. The results are slow in their development, problematic in their outcome, and largely dependent on conditions which are outside the range of adequate control or management. It is often a matter of watching and waiting for Nature's experiments. Most of these handicaps are removed when it becomes possible to institute the desired conditions and to observe desired pathologic states at will. The requirements of months are satisfied by days or weeks when the assistance of animal experimentation is available. The need of complete verification on human material is, however, always to be kept in mind. In a sense this forms the corollary of the experimental investigation of lower forms.

We have already noted[1] that an active antineuritic substance (or substances) has been isolated from foods in some purity, or at any rate extracted in relatively concentrated form by various investigators. It is more than likely—indeed, rumors of success are already afloat—that an antineuritic agent of comparatively simple chemical make-up will soon be synthesized or prepared; but investigations of this sort on a large scale involve great expense as well as technical difficulties, so that in lieu of the [awaited] announcement of the precise composition of the tangible antineuritic substances, some knowledge of the relative available concentration of the active component *in* certain common foods is likely to be of value. Doubtless they could be used effectively to supplement the diets which are believed to be deficient in the case of large groups of individuals. The Lister Institute in London has lately supplied information along these lines. Cooper[2] has determined the amounts of various foods which are necessary to prevent the occurrence of polyneuritis for a definite time in adult pigeons fed on polished rice. As pigeons fall ill with the disease in about three weeks when fed exclusively on such rice, the bearing of our earlier remarks on the relative advantages of preliminary animal experimentation becomes obvious.

It appears that the rapidity of the onset of the polyneuritis in pigeons depends in some measure on the amount of food eaten. Well-fed birds do not remain free from the affection so long as those receiving less rice. In explanation it has been suggested that birds fed on a smaller, insufficient ration have to rely on their own tissues for supplementing the food-supply, and are thus able to obtain for use a larger proportion of the anti-

1. The Relation of Rice to Certain Diseases, editorial, THE JOURNAL A. M. A., Feb. 24, 1912, p. 557; Recent Japanese Investigation on Rice Bran in Relation to Disease, editorial, ibid., Sept. 14, 1912, p. 883.

2. Cooper, E. A.: The Protective and Curative Properties of Certain Foodstuffs Against Polyneuritis Induced in Birds by a Diet of Polished Rice, Jour. Hyg., 1912, xii, 436.

neuritic substance distributed in the tissues than the well-fed birds.

The antineuritic substance appears to be most irregularly distributed among foods. Yeast is more efficient, according to Cooper, in preventing the polyneuritis induced by a polished rice diet than is any other food material tested by him.[3] Egg-yolk exceeds all the other foods of animal origin in antineuritic value. Its capacity for preventing the disease is not measurably altered by boiling for a few minutes. In addition to these two products, heart-muscle, lentils and barley will be effective in the prevention of beriberi; on account of their cheapness the dried lentils and unhusked barley will probably be most practicable for this purpose. Raw beef has only a small efficiency. The fact that heart-muscle is much more potent brings with it the reminder that in human beriberi heart failure is a common symptom. Sheep brain has only a low concentration of the antineuritic substance, suggesting that the latter, though essential for the integrity of the nervous structures, is not contained in them as such.

The relative efficiencies of the various foods in preventing polyneuritis and in maintaining the body-weights of birds fed on polished rice do not correspond. This indicates that the antineuritic constituent and the substances maintaining body-weight are not identical. Cooper believes that the latter substances are not protein, fatty or lipoidal in nature.

STAPHYLOCOCCUS CULTURES TO CAUSE DIPHTHERIA BACILLI TO DISAPPEAR FROM CARRIERS

It long seemed as if little or nothing of any real account could be done to hasten the disappearance of diphtheria bacilli from the throats and noses of carriers. Removal of large tonsils and of adenoids as well as the usual treatment of other chronic nasopharyngeal conditions have not been uniformly and promptly successful; and it does not seem that the disappearance of the bacilli can be hastened by the use of ordinary gargles of various kinds. The conviction was forming that really there was nothing to do but to let "Nature take its course."

The results of certain experiences recently reported with the procedure suggested by Schiötz,[1] a Danish physician, however, indicate that a really serviceable method may have been found. By chance Schiötz observed that a patient with a sore throat apparently due to *Staphylococcus aureus* did not contract diphtheria, although placed in a diphtheria ward; and furthermore that intercurrent attacks of sore throat were followed by the disappearance of diphtheria bacilli previously present.[2] This led him to introduce broth cultures of staphylococci into the throats of chronic carriers of diphtheria bacilli with altogether gratifying results; that is to say, the bacilli promptly vanished and the carriers suffered no harm whatever. There are now several reports at hand of equally satisfactory results with this procedure.[3] In no case has any evil been noted and in almost all cases the bacilli have disappeared quickly. Lorenz and Ravenel found staphylococcus spray more effective than the ordinary antiseptic applications in diphtheria as judged by the promptness of the disappearance of the bacilli in most of the cases so treated.

Usually fresh broth cultures of staphylococci have been applied either on swabs or in the form of spray into the throat and nose at intervals of three or four hours, or so. The way in which the staphylococci act under these circumstances is not known. De Witt did not find any antagonism between the staphylococcus and the bacillus in test-tube experiments. In view of the success of the Schiötz method, which appears to be quite harmless under the circumstances, further trials seem fully warranted. If further experience yields results as satisfactory as those obtained hitherto the problem of the diphtheria carrier will have been simplified very much and the necessity for much irksome quarantine removed. It would be highly interesting to learn whether sterilized cultures of *Staphylococcus aureus* or sterile products of the growth of this germ also can cause diphtheria bacilli to disappear from the throat, because if so, there would be no hesitation whatever about making use of the method, which perhaps might be applied with advantage in the later stages of all cases of diphtheria.

WHO IS RESPONSIBLE FOR THE LITHIA WATER FRAUD?

It has long been recognized by physicians that one of the greatest frauds perpetrated on the American public is the exploitation of the so-called "lithia waters"—some of the most widely sold of which contain less lithia than does the water of most of the rivers of the United States. Millions of dollars have been expended on these waters and now the United States government, under the federal Food and Drugs Act, is spending large sums in an effort to compel the dealers to label their products truthfully, and the dealers are spending still larger sums in an effort to perpetuate the present labels.

Who is really responsible for the "lithia water" delusion? We regret to have to state that it is chiefly the medical profession. It originated in the medical profession; it was founded on some crude and unscientific experiments and perpetuated by members of the

3. See also Barsickow: Experimentelle Untersuchungen über die therapeutische Wirkung der Hefe bei der alimentären multiplen Polyneuritis der Meerschweinchen und Tauben, Biochem. Ztschr., 1913, xlviii, 418.

1. Schiötz: Ugesk. f. Læger, 1909, lxxvi, 1373; abstr., THE JOURNAL A. M. A., Jan. 29, 1910, p. 422.

2. Page, Henry: Diphtheria Bacillus-Carriers, Arch. Int. Med., January, 1911, p. 16. Catlin, S. R., Scott, L. O., and Day, D. W.: Successful Use of the Staphylococcus Spray on Diphtheria Carriers, THE JOURNAL A. M. A., Oct. 28, 1911, p. 1452. De Witt: Jour. Infect. Dis., 1912, x, 24. Lorenz, W. F., and Ravenel, Mazyck P.: The Treatment of Diphtheria Carriers by Overriding with Staphylococcus Aureus, THE JOURNAL A. M. A., Aug. 31, 1912, p. 690. Wiener: New York State Med. Jour., 1913, xiii, 75.

profession blindly accepting the statements of exploiters of all kinds of waters dubbed "lithia waters" to meet the demand originally created by physicians. In a similar way the profession is largely responsible for many of the "lithia" nostrums which are being foisted on the public as "uric acid solvents."

There is a question of greater present interest, however: Is the medical profession now laying the foundation for similar frauds in the future? The answer must unfortunately be in the affirmative. As repeatedly pointed out, many of the proprietaries advertised in medical journals and used by physicians to-day will be the typical "patent medicine" of to-morrow. Just as the lack of scientific training and the resultant gullibility led to the lithia water fraud, so now the lack of thorough education (with all that this term implies) is responsible for the present proprietary evil.

The most discouraging feature of the case is that many medical students are not receiving an education which will safeguard them from falling into the same errors; in only a few schools, for example, do the students receive instruction which would enable them to point out to a patient in a few convincing words the fallacy of the use of the so-called lithia waters. It is certainly a remarkable fact that although the number and complexity of new drugs are increasing at a rate hitherto unknown, never in the history of medicine has the study of drugs been so neglected in many of the leading medical schools as at present. This is not altogether a question of poverty, for several of these schools have recently introduced excellent departments of bacteriology, preventive medicine, physiologic chemistry and the rather indefinite subject of "experimental medicine," although they have no department of pharmacology, or practically none. It would seem to require no argument to show that the students of such institutions are not receiving the education to which they are entitled.

Serious attempts to discover new remedies of value have been practically abandoned by the medical schools; in the efforts of our Association, through the Council on Pharmacy and Chemistry, to keep its members informed on new drugs, as much reliance has had to be placed on men outside of medical schools as on those connected with medical schools. The teaching of the fundamental facts concerning the drugs which every physician, be he an internist or a specialist in any branch, uses every day is left largely to chance. Is it not time for our medical schools to reinstate the study of drugs, even if some of the work in other branches has to be curtailed? The medical profession should recognize its part in the origination and perpetuation of such frauds as that of the "lithia waters," and our medical schools should realize that graduates of to-day in their knowledge of these important subjects are often relatively no better off, if indeed they are as well off, as graduates of two or three decades ago.

PROGRESS OF HOOKWORM ERADICATION

The completion of the third year of activity of the Rockefeller Sanitary Commission for the Eradication of Hookworm finds commendable progress to have been made as evidenced by the annual report of the commission for the year 1912. Undoubtedly the actual work done has been vastly augmented by the stimulation of popular and professional interest in the eradication of hookworm infection and the present wide-spread recognition of the physical, mental, social and economic menace of this disease.

The survey of foreign countries for the prevalence of the hookworm, as noted in THE JOURNAL a year ago,[1] showed a general infection of those parts of the earth lying between 36 degrees north latitude and 30 degrees south latitude, a belt 66 degrees in width encircling the earth. Within this belt is included a considerable part of the United States; eleven states in particular have been found heavily infected. In Texas 83 counties have the infection and of the 884 counties in the other ten states, infection has been found in 796. It is presumable that the remaining 88 counties will also be found infected when the work is extended to them. In all, 238,755 persons were treated at an expenditure per person treated of 77 cents, as compared with 140,378 persons treated in 1911 at an average expenditure per person of $1.05, and 14,443 treated in 1910 at an average expenditure per person of $4.66. In the three years, a total of 393,566 persons have been treated for uncinariasis.

The total expenditure of the commission for the year was $184,671.60 in addition to which the sum of $22,482.44 was spent by counties, and $19,972.52 by states for fighting the hookworm, making a grand total of $227,126.56. The microscopic examinations made in 1912 numbered 326,951, as against 90,724 in 1911, and 14,789 in 1910.

There is an excellent and increasing tendency to use the microscope in diagnosis. The procedure is simple and every physician should employ it. Experience teaches that many persons are infected who present very slight or no clinical signs of the disease and, on the other hand, that not every anemia that manifests symptoms is due to the hookworm. In this connection it is of interest to note that in his annual report for the year 1912, on the examination of immigrants at San Francisco, Dr. W. C. Billings[2] calls attention to the fact that 1,556 cases of uncinariasis were certified in 1912, this being more than double the number certified in 1911. Billings ascribes this increase to improved methods of examination and points out that the results conclusively demonstrate that at least in Oriental races it is impossible to detect all cases of hookworm infection by clinical examination alone, and that the microscope is absolutely essential. He found a high ratio of infections with negative clinical signs.

1. Report on Hookworm Eradication, editorial, THE JOURNAL A. M. A., June 22, 1912, p. 1946.
2. Billings, W. C.: Annual Report U. S. P. H. S., 1912, p. 142.

In connection with the field work against hookworm infection, various studies were conducted. Among these was an investigation of 129 cases of amenorrhea due to the hookworm which illustrated the unsuspected frequency of uncinariasis as a cause of amenorrhea. An effort is being made to discover a better vermifuge than thymol. This is a very important point. Although thymol has proved efficient, its careless use is attended with certain dangers and there is a distinct need for a more efficient vermifuge without the necessity for dietary restrictions and purgation.

The method of treatment recommended is as follows: A dose of Epsom salt is administered on the evening of the first day, or one dose is given at 5 p. m., a light supper at 6 p. m., and another dose of Epsom salt at 8 p. m. On the second day one third of the dose of thymol is given at 6 a. m., one third at 7 a. m., and one third at 8 a. m. At 10 a. m. another dose of Epsom salt is given. This permits the withdrawal of the last one or two doses of thymol if unfavorable symptoms supervene. The average dose is 30 grains. It is considered best in giving the Epsom salt to dissolve a tablespoonful of the salt in a tablespoonful of water, administer this and then have the patient drink copiously of water. After the morning dose of salts following the thymol, water should not be given so freely. During the administration of the thymol, little if any water is allowed. About an hour after the third dose of thymol, a cup of coffee without milk is permitted, and half an hour after the morning salts, one or two cups of coffee without milk but with crackers.

Current Comment

THE MECHANISM OF PROTEIN ASSIMILATION

Inasmuch as recent studies by Folin and his associates and also by Van Slyke and Meyer have made it appear likely that the problem of protein assimilation is in reality a question of how the digestion fragments, the amino-acids, are disposed of in the organism, it becomes of great interest to trace them from the alimentary canal through the blood-stream to the tissues to ascertain their final fate. Van Slyke and Meyer[1] have found that amino-acids introduced into the circulation quickly disappear. The suggestion is obvious that either they are destroyed or removed with great rapidity by the tissues. The more recent work of the New York investigators makes it evident that a concentration in the tissues occurs. The muscles, liver, kidney, spleen and pancreas, for example, soon contain about ten times as much amino-acid nitrogen as is found in the blood per unit of mass. The amount of amino-acids thus taken up out of the blood by different tissues varies, that taken by the brain being especially small. The means by which these products of digestion are held in the tissues appear to be physical rather than chemical; indeed, the facts thus far known are consistent with the assumption that the amino-acids are taken up from the blood and held in the tissues by absorption, chemical transformation of the absorbed compounds following later. The amino-acids thus retained disappear from the kidneys at a rate incomparably greater than that at which they leave the muscles or other organs. Their disappearance from the liver and kidneys is accompanied by an increase in the urea content of the blood. Van Slyke believes that while the muscles are stored with amino-acids up to their saturation-point after heavy protein feeding, the liver and kidneys metabolize their portion of the products as rapidly as they receive them; so that perhaps the entire task of removing the digestion products from the blood-stream when the other tissues become saturated devolves on these two sets of organs. To this may be added the hypothesis that most of the proteolytic products which the liver and kidneys take up are normally broken down, the nitrogenous portion appearing as urea.

1. Van Slyke, D. D., and Meyer, G. M.: Distribution of Amino-Acids in the Body, Proc. Soc. Exper. Biol. and Med., 1912, x, 38. Van Slyke, D. D.: Protein Assimilation, abstr., THE JOURNAL A. M. A., April 12, 1913, p. 1183.

A COUNCIL ON PATENT MEDICINES

The better class of drug journals, in common with the better class of the pharmacists themselves, have long recognized the anomalous position in which the modern druggist stands. On the one hand, the druggist urges physicians to return to rational prescribing and to eschew proprietary products; on the other hand, the druggist himself stands before the medical profession as a dispenser of "patent medicines" — proprietary remedies of the most unscientific and frequently fraudulent type. In commenting on this unfortunate state of affairs, the *Journal of the American Pharmaceutical Association* in its April issue says that the druggist's position has been pressed on him by force of circumstances "in which patent medicines represent his business necessities while the propaganda for rational prescribing represents his aspirations for better things and his strivings for a more professional, as well as a more profitable business." Recognizing that something must be done if pharmacists wish to retain the confidence both of the physician and of the public, and to keep their professional standing, the *Journal* recommends that the American Pharmaceutical Association appoint a council that shall stand in the same relation to "patent medicines" that the Council on Pharmacy and Chemistry of the American Medical Association stands in relation to proprietary medicines. As the drug journal puts it, the work of the council whose creation it suggests should be "to determine first of all whether there is or can be such a thing as a legitimate proprietary medicine ["patent medicine"] which a druggist can conscientiously recommend and sell to the general public, and whether on the whole the public is benefited or injured by the use of such ready-made medicines." If the council decides that there are "patent medicines" which the druggist may recommend and whose sale will benefit the public, its next work would be "to determine whether it is possible to draw a distinct line of demarcation between legitimate and illegitimate remedies. . . ." The growing distrust in the whole "patent medicine" business is such that it behooves our sister profession to rid itself of the stigma

which the sale of worthless, and in many cases dangerous, preparations is bringing on an honorable profession. A council such as the editor of the *Journal of the American Pharmaceutical Association* recommends might do much toward this end. If it is brought into existence and does its work thoroughly and honestly, we can with a certain degree of accuracy prophesy what will happen: Some of the most vicious "patent medicines" will be driven off the market. Others less vicious but worthless will have their sales greatly curtailed. As a corollary of this, the American Pharmaceutical Association may expect organized opposition in the form, possibly, of a League for Pharmaceutical Freedom. The *Journal of the American Pharmaceutical Association* will be vilified by many, if not most, of the privately owned drug journals. And last, but not least, the editor of the *Journal* will become the center of an attack in which all the resources of blackguardism and billingsgate will be brought to bear in an attempt to besmirch and blacken his reputation. But the fight will be well worth while.

AN EARLY REFERENCE TO INFECTION CARRIERS

That healthy persons may be carriers of infection by the persistence and proliferation of the causal germs in the healthy human body has been known for fifteen or twenty years. The possibility of this kind of carrier of infection does not seem to have been at all familiar to our forefathers and yet the conception seems to be expressed quite clearly by Richard Mead,[1] the father of quarantine, when he says: "If there be any Contagious Distemper in the Ship: the *Sound* men should leave their cloaths, which should be burnt; the men washed and shaved; and having fresh Cloaths, should stay in *Lazaretto* thirty to forty days. The reason for this is, because Persons may be recovered from a Disease themselves and yet retain *matter* of *Infection* about them a considerable time." In these words are expressed a truth the significance of which was not clearly grasped until nearly two hundred years after they were written. Richard Mead is the author also of the following dictum which, besides its general application, has a very special meaning for the typhoid carrier: "As *nastiness* is a great source of *Infection*, so *cleanliness* is the greatest *Preventative*."

THE POISON LABEL—A NEEDED AMENDMENT

For the purpose of safeguarding the public against the dangers of poisons, Mr. French of Idaho has introduced into the House of Representatives a proposed amendment to the federal Food and Drugs Act. The amendment which refers to the labels and containers of poisons declares that a drug shall be deemed misbranded:

"If the contents of the package be a virulent poison and shall not be placed in a container labeled 'Poison' and shall not contain on the label at least one suitable antidote and the name of the person, firm or corporation dispensing the substances, and in the case of liquids, in addition thereto, said container shall be a colored glass roughened bottle of a type described by Secretary of the Treasury, the Secretary of Agriculture and the Secretary of Commerce."

Idaho is to be congratulated on having a representative whose solicitude for the public safety may be the means of strengthening the Food and Drugs Act. In the past it has been altogether too easy for careless or unscrupulous manufacturers to sell powerful drugs without giving the purchaser any hint as to the potency of the product he was buying. Another amendment should be made, or the proposed one modified, so as to protect the public still further. All "patent medicines" containing poisonous drugs should be required to be labeled "Poison." The protective action of such an amendment would soon be demonstrated. In Great Britain, where there is such a legal requirement, preparations like Winslow's Soothing Syrup, containing such insidious poisons as morphin, have to be labeled "Poison." As a result the Winslow concern has taken the morphin out of its British product and has substituted a drug that is not listed in the schedule of poisons. But Winslow's Soothing Syrup still goes to American babies with its deadly morphin. The value of the requirement lies in the fact that the word "Poison" has a very real and definite meaning to any person that reads English. The same cannot be said of the chemical names for various poisons. Thus the most ignorant of mothers would hesitate to give her child a "patent medicine" that was labeled "POISON," but she would pay little attention to the statement that it contained morphin, for instance. The weakness of the present federal law has been referred to many times. As the law now stands, "patent medicines" may go to the public containing such deadly poisons as strychnin, atropin, prussic acid, arsenic, etc., with no warning or hint of the presence of these drugs.

DEVELOPMENT BY LIMITATION IN MEDICAL EDUCATION

True development, vigorous and useful, in every phase of life and activity requires certain limitations or restrictions. Unrestricted expansion or growth often leads to a dissipation of energy and resources which amounts to degeneration. Streams are often rendered deeper, more navigable and therefore more useful by being confined in narrower channels. Fruit-trees are best developed and produce better fruit if by a careful pruning the life energies are retained in a smaller number of branches. Men in the professions or in other walks of life can do their best work by devoting themselves to certain special lines of work. So in medical education limitations are essential and, considering the vast oversupply of medical schools existing in this country a few years ago, the pruning process has resulted in an unquestioned improvement. In certain cities and in some states the energy and resources formerly dissipated among several separate medical colleges are now, through a merging of the schools, being concentrated into one. A few months ago[1] the Johns Hopkins Medical School fixed a limit to the number of students to be taken into each class in order that it might better train those it did enrol. A few

1. Mead, Richard: Short Discourse concerning Pestilential Contagion and the Method to be Used to Prevent It, ed. 7, London, 1721, p. 22. In this and the following quotation the italics are in the original.

1. Limiting Enrolments in Medical Schools, Current Comment, THE JOURNAL A. M. A., Oct. 26, 1912, p. 1550.

years ago two state universities, those of Missouri and North Carolina, discontinued the clinical years of the medical course, believing that it was better to develop effectually the work of the first two years than to continue to give in an unsatisfactory manner the full four-year course. And now word has been received that the trustees of Dartmouth Medical School, the fourth oldest medical school in the United States, have voted to discontinue clinical teaching and the granting of the M.D. degree, recognizing that the limited hospital and dispensary material at Hanover is no longer adequate to furnish modern physicians with a satisfactory clinical training. Such action as this is necessarily drastic, especially in an institution which has granted medical degrees year after year for more than a century; but the decision is characteristic of institutions like Dartmouth, which have at heart not only the interests of education and of the students individually, but also the welfare of the public. That medical education at Dartmouth will be bettered is certain, since the resources formerly expended in a four-year course will hereafter all be used to develop the equipment and teaching of the laboratory subjects. With its entrance requirements of two or more years of collegiate work all the medical students will leave Dartmouth holding baccalaureate degrees, and will therefore be alumni of that institution, even though the medical degree is no longer granted. These men will carry with them credentials of having taken two years of medical work. With the further development of the equipment of the teaching and of research — and in this respect Dartmouth has an exceptional opportunity — the medical credentials held by these students will undoubtedly make them eligible to complete their medical courses in any of the best medical schools where ample clinical facilities are available. This action by the trustees of Dartmouth College furnishes another example of the magnificent decisions which, in the last few years, have marked the campaign for better-trained physicians in this country.

Medical News

COLORADO

State Board Notes.—At the annual meeting of the State Board of Health, April 28, Dr. Sherman Williams, Denver, was elected president; Dr. Jacob Campbell, Boulder, vice-president; Dr. Paul S. Hunter, Denver, secretary, and Dr. Crum Epler, Pueblo, treasurer.——The State Board of Health has voted unanimously to request the governor to veto the lying-in hospital bill recently enacted by the legislature.——Dr. Frank E. Rogers, Denver, has been appointed a member of the Colorado State Board of Medical Examiners.

Protests of Denver Physicians.—At a meeting of Denver physicians, April 30, a committee was named to prepare resolutions protesting against the election of a layman as head of the Department of Social Welfare. Dr. Aubrey H. Williams was made chairman of the committee.——Many Denver physicians are preparing to enter a vigorous protest against the adoption of a charter amendment, May 21, which, it is alleged, would place the health department of Denver under the control of the Medical Department of the State University.

DISTRICT OF COLUMBIA

Personal.—Dr. Erwin F. Smith, plant pathologist in the Department of Agriculture, is said to have declined a position with the Rockefeller Institute for Medical Research at a salary at more than double that which he receives from the government.——Dr. Eva C. Reid of the medical staff of St. Elizabeth's Hospital for the Insane, has resigned, to accept a similar position in the State Hospital at Talmage, Cal.

Eye, Ear and Throat Hospital Opened.—The Washington Eye, Ear and Throat Hospital is now open at 4 Iowa Circle, with the following medical staff: surgeon in chief, Dr. Oscar Wilkinson; assistants, Drs. T. F. Wickliffe, I. P. Hunt and S. B. Pole; consulting surgeons, Drs. W. P. Carr, C. S. White and H. L. Taylor; consulting physicians, Drs. Philip Roy, William Barton, C. R. Luce and O. H. Coumbe; anesthetists, Drs. Thomas F. Lowe and I. P. Hunt.

ILLINOIS

New Officers.—Livingston County Medical Society, twenty-fifth semi-annual meeting at Pontiac, May 1: president, Dr. B. F. Elfrink, Chenoa; secretary-treasurer, Dr. John Ross, Pontiac.

Personal.—Dr. M. E. McGann, Joliet, is reported to be seriously ill.——Dr. F. W. Wilcox, Minonk, who was operated on recently for appendicitis in Chicago, has returned home and resumed practice.——Dr. W. C. Bridge, Elgin, sailed for Europe, May 3.——Dr. and Mrs. J. W. Spear, Mason City, have returned from a trip to Cuba and the Isle of Pines.

Recommends Inspection and Supervision of Hospitals.—The State Charities Commission in its third annual report, recommends state inspection and supervision of hospitals and sanatoriums of every character which receive sick persons for treatment, and urges the public to take a sympathetic and humane interest in the state charitable institutions and in all questions relating to them.——The commission also voices its opposition to the system of fining, as practiced throughout Illinois. It believes it to be wrong to fine the head of a family for misdemeanor and take from him that which should go to his family for their support. Fines so levied should be collected and paid over to the family for its support, and while the offender is held a prisoner, he should be compelled to work and his earnings should be delivered to his family.

More Eligibles for County Institution.—The following additional list of those eligible for positions on the attending staff of Cook County Hospital has been announced: department of tuberculosis, Drs. William J. Butler and Arthur F. Beifeld; department of skin and venereal diseases—Drs. Frank Edward Simpson and Edward G. Harnes; department of gynecology—Drs. Bertha Van Hoosen, Channing W. Barrett, Carey Culbertson, Herbert M. Stowe, Frank M. Lynch, Franklin H. Martin, Arthur H. Curtis, Samuel L. Weber, Henry F. Lewis, Ernst Saurenhaus, Sidney Klein, W. A. Newman Dorland, Edward L. Moorhead, Noble S. Heaney, George de Tarnowsky, Henry Schmitz, Alfred J. Willits, G. Schmauch; department of obstetrics—Drs. Herman Marion Stowe, Henry F. Lewis, William George Leo, David S. Hillis, W. A. N. Dorland, Carey Culbertson and Otto H. Rohelack; department of eye—Drs. Edward V. Brown, George F. Suker and Jacob W. Clark; department of surgery—Drs. A. Belcham Keyes and Charles E. Humiston.

Chicago

Personal.—Dr. Robert B. Preble, who was attacked with appendicitis while en route to Washington, May 5, was operated on in George Washington University Hospital the next day and returned to Chicago, May 11.——Dr. Frances Dickinson has been elected president of the Arts-Crafts Institute Guild.——Dr. Charles F. Sanborn has been appointed assistant warden of the County Hospital and assumed his duties, May 9.——Dr. John A. Hornsby, formerly superintendent of Michael Reese Hospital, has been appointed county hospital efficiency expert and will advise with the county board and county architect in matters concerning the plans for the new Cook County Hospital and other hospitals to be erected by the county.——Dr. Frank S. Johnson has been elected president and Dr. S. C. Stanton secretary of the Physicians' Club of Chicago.——Dr. Dean D. Lewis is on a trip to the Southwest, including attendance at the meeting of the Arizona State Medical Association.

KANSAS

New Officers.—McPherson County Medical Society organized at McPherson, May 2: president, Dr. L. A. Bradbury, Galva; secretary, Dr. G. R. Dean, McPherson.——Atchison County Medical Society, reorganized, May 5, at Atchison: president, Dr. M. T. Dingess; secretary-treasurer, Dr. E. T. Shelly, both of Atchison.

State Society Meeting.—The forty-seventh annual meeting of the Kansas Medical Society was held in Topeka, May 7-8, and the following officers were elected: president, Dr. M. F. Jarrett, Fort Scott; vice-presidents, Drs. C. C. Nesselrode, Kansas City; J. F. Gsell, Wichita, and G. A. Blasdel, Garnett; secretary, Dr. Charles S. Huffman, Columbus (reelected); treasurer, Dr. L. H. Munn, Topeka (reelected); councilors—second district, Dr. H. B. Caffey, Pittsburg; sixth district—Dr. Archibald D. Jones, Wichita; tenth district — Dr. D. R. Stoner, Quinter; eleventh district—Dr. J. A. Dillon, Larned; twelfth district—Dr. W. F. Fee, Meade, and delegate to the American Medical Association, Dr. George M. Gray, Kansas City. Wichita was selected as the next place of meeting.

MARYLAND

New Hospitals.—Ground will be broken very soon for an emergency hospital at Easton to be constructed of reinforced concrete, brick and stone, with a central building and wings. ——Plans have been prepared for a new building for the treatment of tuberculous patients at the Springfield State Hospital, Sykesville. It is to be two and one-half stories in height, 67 by 97 feet, and of brick and concrete construction.

Anniversary of Sheppard and Enoch Pratt Hospital.—The sixtieth anniversary of the granting of the charter to the trustees of the Sheppard Asylum, Towson, by the legislature of Maryland, May, 1853, was celebrated at the Enoch Pratt Hospital, May 8-10. On the first day, the address of welcome was given, followed by a historical address by Dr. Edward N. Brush; an address on "The Present Position of the Asylum as an Educational Factor in Medicine," by Dr. Edward D. Fisher, New York City, and a paper on "The Work of the Hospital" by Dr. William Rush Dunton, Jr., Towson. After inspection of the hospital, a buffet luncheon was served at the Casino at 6:15 p. m. and in the evening, an address was delivered by Dr. Adolf Meyer, director of the Phipps Psychiatric Clinic, followed by papers by former members of the staff. On the evening of the second day the principal address on "The Transition of American Psychiatry from the Asylum to the Hospital," was delivered by Dr. Edward Cowles, Boston, followed by five papers on technical subjects by former members of the staff. The third day was devoted to a bazaar for the sale of work of the handicraft classes and to field sports.

Baltimore

Psychiatric Clinic Opened.—The Phipps Psychiatric Clinic of Johns Hopkins Hospital opened for the reception of patients, May 1.

Personal.—Dr. Thomas P. Sprunt of Johns Hopkins University has been appointed professor of pathology in the graduate school of medicine of the University of Alabama, Mobile.——Dr. Arthur Wegefarth fractured his leg near the ankle while boarding a street car, May 6.

Club Inspects Clinic.—Under the escort of Dr. Adolf Meyer, the Interurban Clinical Club opened its seventeenth annual meeting by going over the new Phipps Psychiatric clinic building at Johns Hopkins Hospital, May 2. After inspection of the clinic and the reading of papers, luncheon was served at 1 o'clock, after which the club went into session for the afternoon and in the evening dined at the Maryland Club.

Faculty Members Promoted.—The following members of the adjunct faculty of the University of Maryland School of Medicine have been advanced to professional rank: Dr. Thomas C. Gilchrist, dermatology; Dr. Frank Martin, operative and clinical surgery; Dr. J. Mason Hundley, clinical gynecology; Dr. Joseph T. Smith, hygiene and medical jurisprudence; Dr. St. Clair Spruill, clinical surgery; Dr. R. Tunstall Taylor, orthopedic surgery; Dr. John R. Winslow, laryngology and rhinology; Dr. James M. Craighill, clinical medicine; Dr. Joseph E. Gichner, clinical medicine and physical therapeutics; Dr. Charles W. McElfresh, clinical medicine; Dr. Irving J. Spear, neurology; Dr. Gideon Timberlake, genito-urinary diseases; Dr. John G. Jay, clinical surgery; Dr. Nathan Winslow, clinical surgery; Dr. Page Edmunds, clinical genito-urinary diseases; Dr. Richard H. Johnston, clinical laryngology and rhinology and Dr. William Tarun, associate professor of ophthalmology and otology.

MASSACHUSETTS

Personal.—Dr. Charles F. Painter has been elected dean of Tufts College Medical and Dental schools, vice Dr Harold Williams, retired.

Contagious Disease Hospital for Boston.—The finance commission has recommended that the city council appropriate $297,800 for the erection of a new building on the Payne property site to accommodate two hundred cases of contagious disease.

New Officers.—Dorchester Medical Society, May 1: president, Dr. Edward J. Brearton; secretary-treasurer, Dr. J. T. Kendricken.——North Essex District Medical Society at Lawrence: president, Dr. F. W. Anthony, Haverhill; secretary-treasurer, Dr. J. Forrest Burnham, Lawrence.

Evening Eye Clinic.—The first evening eye clinic in Boston was recently opened at the Boston Dispensary. About forty patients appeared on the first evening, all of whom were working people who were unable to attend a clinic during the day. Dr. Edward Hartshorn is in charge of the clinic.

Seeks Anti-Cancer Fund.—Dr. William Duane, for six years radium research assistant at the Currie Laboratory, Paris, has been secured by the Harvard Medical School to organize for the Harvard Cancer Commission, a laboratory in which cancer may be studied from the point of view of the physicist. The university requires $250,000 for the establishment of this laboratory. For the present, experiments will be conducted in the Collis P. Huntington Building.

Conference Medical Committee Appointed.—To solve problems arising in connection with the workmen's compensation act, and especially the question of reasonable allowance for compensation for medical and hospital services, the following committee has been appointed to confer with the State Industrial Accident Board: Drs. Frederick J. Cotton, Francis D. Donoghue, Frank E. Allard and William H. Ruddick, Boston; F. W. Anthony, Haverhill; Samuel E. Fletcher, Chicopee, and Samuel H. Calderwood, Roxbury.

Septic Sore Throat in Canton.—Under date of May 10 it was reported that nearly 400 of the 3,000 inhabitants of Canton were afflicted with epidemic septic sore throat, with ten deaths. Pneumonia, erysipelas and scarlet fever as complications have been frequent during the epidemic. The disease is believed to have originated from the milk of one of the principal dairies supplying the town, cases of sore throat having occurred in the family of the dairyman on whose route nearly all the cases have occurred. Daily inspection of dairies has been instituted, milk is required to be pasteurized and the sterilization of containers of milk is enjoined. The public schools and the public library have been closed and other precautionary measures have been adopted.

Tropical Medicine Expedition.—Dr. R. P. Strong, professor of tropical medicine; Dr. E. E. Tyzzer, assistant professor of pathology and director of the Harvard Cancer Commission; and Mr. O. T. Brues, instructor in entomology, comprise a commission which sailed from New York, April 30, for a five months' tour of investigation and study on behalf of the Department of Tropical Medicine of Harvard Medical School. The first object of the expedition is to obtain material and specimens for the department, and Guayaquil, Ecuador, has been selected as the objective point because it is a hotbed for tropical diseases. The second object of the expedition is to study verruca peruviana. The expedition will obtain fresh material on various tropical diseases and, on the way to and from Peru, will inspect important hospitals on the Isthmus of Panama and elsewhere.

MICHIGAN

Tuberculosis Exhibit.—The Detroit Society for the Study and Prevention of Tuberculosis of which Dr. H. M. Rich is vice-president, is holding an exhibit in the new Dime Savings Bank Building which is attracting great interest.

New Registration Board.—The governor has appointed the following as members of the State Board of Registration in Medicine: Drs. G. W. Nafe, Fremont; Albertus Nyland, Grand Rapids; George Le Fevre, Muskegon; W. T. Dodge, Big Rapids, and C. B. Burr, Flint.

NEW HAMPSHIRE

Commencement at Dartmouth.—At the commencement exercises of Dartmouth College, April 25, the degree of doctor of medicine was conferred on a class of ten.

Personal.—Dr. J. E. Reynolds, superintendent of the New Hampshire Tuberculosis Hospital, has been appointed superintendent of the Bonnie Burn Sanatorium, Scotch Plains, Elizabeth, N. J.

School Suspends Clinical Teaching.—Word from Dartmouth College states that at a meeting of the board of trustees held April 26, it was voted to suspend the granting of the degree of doctor of medicine after the graduation of the class of 1914.

All the energies and finances available for the medical school will be hereafter spent in developing the work of the first two years. Dartmouth Medical School was the fourth medical college organized in the United States, having been established in 1797.

NEW YORK

New Officers.—Buffalo Medical and Surgical League, April 8: president, Dr. Julius Richter; secretary, Dr. Frank C. Kleckner.

Home for Public Health Association.—A committee consisting of Drs. John M. Lee, Montgomery E. Leary and Henry T. Williams has purchased the Robey homestead, Rochester, for a home for the Rochester Public Health Association, at a cost of $12,000.

Hospital News.—Several thousand dollars have been raised for the new Benedictine Hospital to be erected in Innis Avenue, Poughkeepsie.——A free dispensary for tuberculosis is to be opened in the Ashley Building, Lockport, $2,000 having been appropriated by the city council for this purpose.

Personal.—Dr. Frank E. Howard, Friendship, was operated on at St. James' Mercy Hospital, Hornell, for appendicitis, May 7.——Dr. John F. Dwyer has been appointed assistant surgeon of the New York Central system at Corning, vice Dr. Thomas Foley, resigned.——Dr. Francis J. Lennon, Buffalo, has been appointed medical director of the Tuberculosis Dispensary and Dr. Nelson W. Strohm, assistant medical director.

New York City

Personal.—Dr. Ira S. Wile has resigned as conference physician of the Riverside Kitchen of the New York Diet Kitchen. ——Dr. Linsly Rudd Williams, New York City, has been appointed State Health Commissioner to succeed Dr. Eugene H. Porter. The salary of the commissioner has been increased to $10,000 a year.

Warned of Final Clean Up.—Commissioner Lederle has announced that the final stage of the spring clean up will be begun May 12 and will continue each day until May 16. Seven hundred thousand folders printed in four languages have been sent to householders throughout the city. The commissioner is firmly convinced that this campaign of sanitation and education will result in a marked decrease in the infant mortality this summer.

Memorial for Dr. Morrow.—A meeting to commemorate the life and work of the late Dr. Prince A. Morrow will be held by the Society of Sanitary and Moral Prophylaxis at the Academy of Medicine, May 22. Dr. Edward B. Bronson will speak on "Dr. Morrow, the Physician;" Dr. Edward L. Keyes, on "Dr. Morrow, the Educator;" William A. Purrington on "Dr. Morrow, the Philanthropist;" Rev. John P. Peters on "Dr. Morrow's Work in Uplifting," and Dr. Charles W. Eliot on "The Pioneer Qualities of Dr. Morrow as a Social Reformer."

Boys Take Health Pledges.—The schoolboys of this city have been asked to sign a pledge which is to remain in force until June 6 that they will abstain from using cheap candies, unwholesome pies, greasy pastry and soda water flavored with highly colored syrups. The request came from the Public School Athletic League and promises as a reward that the boys who keep this pledge will excel in the athletic contests to be held in Central Park on June 6. The boys are furnished a special hygienic program arranged by Dr. G. Ward Crampton.

Appointments at the College of Physicians and Surgeons.—The trustees of Columbia University have appointed Dr. Hans Zinsser to the chair of bacteriology made vacant by the death of Professor Hiss. Drs. Walton Martin and H. H. M. Lyle were appointed professors of clinical surgery; Dr. Frank C. Matthews and Dr. William A. Downes were appointed assistant professors of clinical surgery; Dr. C. C. Leib was made assistant professor of pharmacology; Drs. James Alexander Miller and Austin W. Hollis, were appointed professors of clinical medicine; and Drs. Lewis F. Frissell and T. Stewart Hart, assistant professors of clinical medicine.

NORTH DAKOTA

New State Board Members.—The following have been appointed members of the State Board of Medical Examiners: Drs. G. M. Williamson, Grand Forks; Albert W. Skelsey, Fargo, and Francis Peake, Jamestown.

State Society Meeting.—The twenty-sixth annual meeting of the North Dakota State Medical Association was held at Minot, May 7 and 8. Grand Forks was selected as the next meeting place, and the following officers were elected: president, Dr. Murdock MacGregor, Fargo; vice-presidents, Drs. R. Hudson Beek, Lakota; Victor H. Stickney, Dickinson, and Andrew Carr, Minot; secretary, Dr. H. J. Rowe, Casselton (reelected); treasurer, Dr. Charles S. Crane, Grand Forks; delegate to the American Medical Association, Dr. James Grassick, Grand Forks, and alternate, Dr. Blake McK. Lancaster, Crosby.

OHIO

Physicians' Building for Cleveland.—A twelve-story structure is projected at Cleveland, intended for the exclusive use of physicians. It is to be located on Euclid Avenue, near the Fuller Hotel.

Alumni Contribute to Relief Fund.—Dr. M. H. Urner, secretary of the Ohio-Miami Alumni Association, reports that $600 has been subscribed by members of the association for the relief of physicians who suffered in the recent floods.

Women's Hospital Established.—The Women's and Children's Hospital, Maternity and Dispensary has been organized in Cleveland by the Women's Hospital Association. The president of the association is Dr. Martha A. Canfield and Dr. Josephine M. Danforth is secretary. A training school for nurses is to be operated in connection with the hospital and the social service system is to be inaugurated.

University Medical School Probable.—A bill recently passed by the state legislature makes possible the merger of the Starling-Ohio Medical College and College of Dentistry, Columbus, with the Ohio State University. The building of the medical college is said to be valued at $300,000. It is free from debt and has been offered to the trustees of the university. The merger will probably take place within a year.

Personal.—Dr. A. Luther Pomeroy, Windsor, was the guest of honor at the Ashtabula County Medical Society, May 6. Dr. Pomeroy has practiced in the county for sixty-seven years. ——Dr. D. B. B. Conklin has been elected president pro tem of the Board of Health of Dayton.——A number of physicians of Columbus were invited by Eugene F. McCampbell, secretary of the State Board of Health, April 27, to meet Maj. Thomas L. Rhoads, M. C., U. S. Army, who has been in charge of the sanitation work in Dayton, following the recent flood. Major Rhoads was also entertained at a farewell dinner at Dayton, April 26.

Hospital Staff Appointed.—Newark Hospital Association announces the appointment of the following medical staff for the ensuing year: chief of staff, Dr. W. S. Turner; surgeons, Drs. C. H. Stimson, A. J. Mitchell, U. K. Essington, W. H. Knauss and H. J. Davis; visiting physicians, Drs. W. C. Rank, W. B. Nye, H. H. Postle, J. T. Harbottle, J. P. H. Stedem, J. W. Barker and George N. Brown; consulting physicians, Drs. Carl E. Evans, H. D. Rank, J. N. Wright, Jr., H. E. Hunt, J. P. Latimer, S. D. McClure and C. J. Loveless; pediatrists, Dr. W. J. Kennedy, and diseases of the eye, ear, nose and throat, Drs. C. B. Hatch, C. S. Morse and D. J. Price.

Cincinnati

Gives Library to Hospital.—Dr. B. Merrill Ricketts, first house surgeon of the New York Skin and Cancer Hospital, has given a library of 5,000 books and 10,000 monographs to that institution.

New Medical College Building.—At a meeting of the faculty of the Ohio-Miami Medical College, May 1, Drs. C. R. Holmes, H. M. Knower, Martin Fischer, Edward Reemelin and Dr. Julius Eichberg were appointed a committee to devise ways and means for the erection of a building for a new medical college on Eden Avenue, nearly opposite the new city hospital and on the hospital grounds. The building is expected to cost $250,000 and to accommodate about two hundred students. The intention is that this building shall be a memorial to Dr. Daniel Drake, the father of medicine in Ohio.

OKLAHOMA

New Society.—The Northeast Oklahoma Medical Society was organized at Tulsa, April 29. Ottawa, Delaware, Craig, Mayes, Nowata, Rogers, Tulsa and Washington Counties are included in the territory of this society. The following officers were elected: president, Dr. G. H. Butler, Jr., Tulsa; secretary, Dr. J. V. Athey, Bartlesville, and treasurer, Dr. W. A. Howard, Chelsea. The next meeting will be held in October in Bartlesville.

OREGON

Class Anniversary.—The sixth anniversary of the class of 1907 of the Medical Department of the University of Oregon, was celebrated by a dinner at the Hotel Oregon, April 29, at

which ten of the twenty graduates were present. Preliminary arrangements were made to organize an alumni association.

PENNSYLVANIA

New Officers.—College of Physicians of Pittsburgh, May 8: president, Dr. Edward Stieren; secretary, Dr. G. A. Holliday.

Alumni to Meet in Harrisburg.—On May 6, Jefferson Medical College alumni of Northumberland, Adams, Dauphin, Cumberland, Franklin, Lancaster, Perry and York counties assembled in Harrisburg, where an all-day clinic was held, and the Southern Chapter of the Jefferson Medical College Alumni Association was organized.

Councilman in Easton.—Dr. W. T. Councilman of Harvard Medical School delivered a lecture in the auditorium of the Easton Public Library, April 29, on "The Nature of Disease." This meeting was arranged through the Speakers' Bureau of the Council on Health and Public Instruction of the American Medical Association.

Typhoid Vaccine for Guardsmen.—On May 8, Adjutant-General Stewart sent an order to local commanders of the three regiments embraced in the First Brigade and of the First Squadron of Cavalry, that every member of the National Guard of Pennsylvania must submit to inoculation with antityphoid serum before the annual encampments.

Tuberculosis Hospital in Progress.—Plans have been prepared for the new tuberculosis hospital for Pittsburgh on the Leach Farm in the Highland Park district. Two ordinances have been passed, one authorizing the completion of the specifications and drawings, and the second authorizing advertisements for bids and the letting of the contract.

Dinner to Dr. Kelly.—The members of the Lackawanna County Medical Society gave a banquet, April 19, at Scranton, in honor of Dr. Howard A. Kelly, Baltimore. At the meeting of the society, Dr. Kelly spoke on "The Power and Useful Influence of Radium," and on the following evening delivered a lecture at the Y. M. C. A. Auditorium on "The Social Evil."

Personal.—Dr. J. W. Geist, Wilkes-Barre, has been appointed local surgeon for the Lehigh and Wilkes-Barre Coal Company, vice Dr. Frank L. McKee, deceased.——Dr. E. A. Gerberich, Shamokin, is suffering with neuritis of the leg which has incapacitated him from work for the last two months.——Dr. Henry C. Bartleson, Lansdowne, is reported to be seriously ill in the Presbyterian Hospital, Philadelphia.

Philadelphia

New Officers.—Physician's Motor Club: president, Dr. J. J. Rohrecht; secretary, Dr. H. A. Sutton.

Baby Clinics in a Church.—Beginning May 13, clinics will be held every Tuesday afternoon in St. Stephen's Church, Germantown. The clinics will be free and two nurses will be present to assist.

Hospital Building Free of Debt.—On April 16 a check for $25,000 was received for the completion of the new hospital building of the Woman's Medical College, near College Avenue and Twenty-First Street. This donation leaves the building free from debt.

Reception to Newly-Elected Professors.—The Medical College of Philadelphia gave a reception April 30, at the Bellevue-Stratford Hotel in honor of Drs. Thomas McCrae and Philip B. Hawk, newly-elected members of the faculty of Jefferson Medical College.

Personal.—Dr. Ignazio Cortese was exonerated April 30 on charges made by a patient's husband regarding treatment given in an obstetric case.——Dr. Herbert J. Baldwin on April 28 was exonerated of any blame in the death of a colored child who was knocked down and killed by Dr. Baldwin's automobile, April 24.

New Surgical Pavilion.—The new surgical pavilion to be erected at Thirty-Fourth and Spruce Streets in accordance with plans for the rebuilding of the entire hospital group of the University of Pennsylvania, is to be five stories and a basement in height, with an eventual addition of four stories. On the ground floor the x-ray department is to be located and also the gymnasium and orthopedic department. On the second and third floors, surgical wards will be established, with accommodation for seventy-five patients, with the necessary dressing rooms, preparation rooms, etc. On the fourth and fifth floors three operating rooms will be provided, each seating from twenty-five to thirty-five and having anesthetizing rooms connected with each, and above these floors will be a roof garden. The entire building is in the Jacobean style.

Phipps Institute Dedicated.—The magnificent new building of the Henry Phipps Institute at Seventh and Lombard Streets, was dedicated, May 10. Dr. Edgar F. Smith, provost of the University of Pennsylvania, presided. A historical sketch of the institute prior to its connection with the university was given by Dr. Lawrence F. Flick. The principal address was made by Dr. Hermann M. Biggs, New York City, who reviewed the tuberculosis situation and offered suggestions as to future activities and influence of the institute. One of the features of the ceremonies was the presentation of the degree of doctor of laws to Mr. Phipps, who has given about $1,000,000 for the erection of the institute, and who sets aside $50,000 each year for its support. A similar honor was conferred on Dr. Edward L. Trudeau, who in 1884 founded the Adirondack Cottage Sanitarium. Mr. Phipps and the trustees of the university gave a dinner to the distinguished guests at the Bellevue-Stratford in the evening at which Dr. J. William White was the toastmaster.

TEXAS

Sanitation at Texas City.—Congress is to be asked for a special appropriation of $100,000 for sanitation, drainage and screening of the quarters of the division of troops now encamped at Texas City.

League will Build Sanatorium.—The Houston Antituberculosis League announces that within the next two months it will erect a joint county and city tuberculosis clinic. The structure will be of the bungalow type, with five large and a number of small rooms, with abundant porches, sterilizing rooms, etc.

New Hospitals.—The contagious disease annex to the John Sealy Hospital, Galveston, has been completed and is in active service.——The Walter Colquitt Memorial Hospital for Tuberculous Children which is practically completed and is now being furnished by the Adoue Seamen's Bethel, given by the family of the late Mr. Adoue, will be opened about May 15.

Personal.—Dr. Robert Boyd, Weatherford, was operated on at Hillcrest Sanitarium for appendicitis, recently, and is said to be doing well.——Dr. J. P. Simonds, Galveston, who recently completed a sanitary survey of Galveston, is conducting a similar work in Beaumont.——The office of Dr. Albert O. Menefee, Tatum, was burned April 19, with a loss of about $1,000.

Honor to Ross and Gorgas.—At the annual meeting of the State Medical Association of Texas, San Antonio, resolutions were introduced by Dr. Albert Woldert, Tyler, setting forth the service rendered humanity by Dr. Donald Ross, Liverpool, England, who discovered the true method of conveyance of malarial fever from the sick to the well and on whose discoveries was based the demonstration of the true method of the conveyance of yellow fever made by the United States Army Commission; and the services of Col. William C. Gorgas, M. C., U. S. Army, in the Panama Canal Zone, by putting in force and using the measures necessary totally to eradicate yellow fever and other tropical diseases in the Canal Zone; and recommending that a committee of seventeen members consisting of the president, secretary, and board of councillors be appointed to be known as the Ross and Gorgas Commemorative Committee, to enlist interest and support, and to solicit subscriptions for a fund to have erected monuments in the Canal Zone or other testimonials commemorative of the services of Drs. Ross and Gorgas.

VIRGINIA

New Officers.—South Piedmont Medical Society at Danville, April 15: president, Dr. James Morrison, Lynchburg; secretary, Dr. George A. Stover, South Boston.

Painter in Richmond.—Under the auspices of the Board of Charities and Correction, Dr. Charles F. Painter, Boston, delivered a lecture at the Mechanic Institute on "The Treatment and Training of Crippled and Deformed Children."

Site for New Hospital.—The Johnston-Willis Sanatorium has purchased for $40,000, the lot and residence once occupied by Dr. Charles M. Shields at Fifth and Franklin Streets, Richmond, and within the next year expects to erect a hospital building as an annex to the present hospital at Sixth and Franklin Streets.

GENERAL

Gorgas Returns to the United States.—Colonel William C. Gorgas, M. C., U. S. Army, chief sanitary officer of the Canal Zone, arrived in New Orleans, April 30, on his way to Washington. He expects to spend several weeks in the United States before his return to his post.

Fighting Food Frauds.—The Eastchester Health League has opened a pure food show at Bronxville and is pushing a campaign against food adulterations. They hope to teach adulterators to keep their ware out of Bronxville and the vicinity. Both the federal and state governments have prepared exhibits.

Pediatrists Elect.—The American Pediatric Society, at its annual meeting in Washington, D. C., May 5-7, elected the following officers: president, Dr. Samuel M. Hamill, Philadelphia; vice-president, Dr. Matthias Nicoll, New York City; secretary, Dr. Samuel S. Adams, Washington, D. C.; treasurer, Dr. C. H. Dunn, Boston, and editor and recorder, Dr. Linnaeus E. LaFetra, New York City. The place of meeting for 1914 will be New London, Conn.

New Dermatologic Officers.—At the thirty-seventh annual meeting of the American Dermatological Association, held in Washington, D. C., May 6 and 8, the following officers were elected: president, Dr. James McFarlane Winfield, Brooklyn; vice-president, Dr. S. Pollitzer, New York City; secretary and treasurer, Dr. Oliver S. Ormsby, Chicago, and member of council, Dr. William A. Pusey, Chicago. Chicago was selected as the next place of meeting.

Anglo-American Medical Association.—At the annual meeting of the Anglo-American Medical Association of Berlin, the following officers were elected: president, Dr. L. D. Green, San Francisco; vice-president, Dr. Carl C. Franklin, New York City; secretary, Dr. George A. Lassman, Baltimore, and treasurer, Dr. Samuel Zielouka, Cincinnati. Any member of the medical profession in good standing is eligible to membership, the dues being fifteen marks.

Railway Surgeons' Meeting.—At the annual meeting of the Association of Railroad Chief Surgeons in Chicago, May 6, Dr. W. H. Bohart, C. & E. I. Railway, was elected president; Dr. Guy G. Dowdall, Illinois Central, Chicago, vice-president, and Dr. L. J. Mitchell, editor of the *Railway Surgical Journal*, secretary, all of Chicago. A committee was appointed to cooperate with the committee of the American Medical Association concerning the promotion of public health and railway sanitation. It was also decided to seek the cooperation of state boards of health and health officers in various localities, in order to obtain supplies of better water and ice on railway trains.

Medical Museum Association.—An informal business meeting of the International Association of Medical Museums was held at the Army Medical School, Washington, D. C., May 5, Dr. A. S. Warthin, Ann Arbor, in the chair. The meeting was called first, to discuss the organization of a local American section in the international body and the perfecting of the organization of the association as a whole on the international basis. It was reported that a sectional society had already been organized as a branch at Frankfort-on-the-Main, Germany, under the directorship of Prof. B. Fischer of the Seckenberg Institute, known as the "Verein zum Austauch anatomischer Praeparaten." Steps have also been taken to establish local secretaries in France, Belgium and England, the Seckenberg Institute remaining as a central European Bureau of Exchange. The second object of the meeting was the making of preparations for the coming of the triennial international meeting to be held in conjunction with the Seventeenth International Congress of Medicine in London, Eng., August 6-13, and the secretary was directed to communicate with the members from various countries suggesting the formation of sectional societies or committees under control of the main body, and requesting each nationality to send representatives to the meeting to be held in London, there to discuss, formulate and establish the mechanism of government of the international association and of its sectional societies. The third order of business was the report of the committee on the organization of a central bureau for North America for the preservation of results of original research. Dr. Leo Loeb, St. Louis, announced that the committee had selected McGill University, Montreal, as the most suitable locality for the new substation and that Dr. Maude E. Abbott had offered her services as curator. The association approved these arrangements and the secretary was asked to write to the leading American investigators in medical research requesting them, after the completion of a given research, to send their material to McGill University, where it will be preserved, catalogued, indexed and at all times available for reference.

American College of Surgeons.—The organization of this society at Washington was briefly noted in THE JOURNAL May 10, 1913, page 1471, with the list of officers elected. The committee charged with the arrangements made a list of about five hundred surgeons of all specialties, from the large cities, the important universities, the special and general surgical societies, the important surgical clinics and hospitals, besides many independent surgeons from various parts of North America, and of these five hundred some three hundred were present to become founders of the organization. It was decided that all these five hundred should be fellows of the College of Surgeons without further formality. Others, whose surgeonship can be unquestionably approved by the committee on credentials, are to be accredited fellows without the formality of an examination. Fellows are divided, for the purpose of classification, into four groups, to be designated Classes A, B, C and D. Class A shall consist of the founders. Class B shall consist of the members of the special surgical societies constituting the Congress of American Physicians and Surgeons, and one hundred each, nominated by an accredited committee, from the Section on Surgery of the American Medical Association, from the Section on Obstetrics, Gynecology and Abdominal Surgery of the American Medical Association, from the General Surgical Section of the Clinical Congress of Surgeons of North America, from the Surgical Specialties of the Clinical Congress of North America, from the American Association of Obstetricians and Gynecologists, from the Canadian Medical Association, from the Southern Surgical and Gynecological Association, and from the Western Surgical Association. Class A shall consist of surgeons of prominence of ten years in the practice of surgery or a surgical specialty who, in the opinion of the committee on credentials, are eligible for fellowship in the college without formal examination. Class D shall consist of surgeons who cannot, in the opinion of the regents, be classified under A, B or C, and for whom the college must establish an examination or other evidence of acceptable qualifications. Fellows will be admitted only to classes A, B and C until the boards of regents and governors agree on standards of requirements for Class D at a meeting to be called in Chicago, November, 1913.

FOREIGN

International Congress on Medical Climatology and Hydrology and on Geology.—The ninth international gathering to discuss questions connected with the treatment and prevention of disease by mineral waters, climatic and meteorologic factors, is to be held at Madrid, Oct. 15-22, 1913. M. O. Leighton and J. C. Stevens of the Geological Survey are mentioned as official delegates from this country. The secretary's address is Encarnacion 10, principal, Madrid, Spain.

Death of Calleja.—The death is reported from Madrid of Professor Julian Calleja y Sanchez, dean of the medical department of the University of Madrid, and president of the Real Academia de Medicina. He presided over the meetings of the International Medical Congress held at Madrid in 1903. His chair in the medical faculty was that of descriptive anatomy and embryology, and he has always been a zealous worker to elevate the standards of medical education and preventive medicine.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, April 25, 1913.

Wounds in the Balkan Campaign More Serious than at First Supposed

Medical Inspector-General Delorme of the military health service drew further conclusions from the campaign in Thrace at the Académie de médecine, April 22, dwelling in particular on wounds received in battle. He pointed out that the effects of the Bulgarian bayonet, which is short and broad, were terrible. As to bullet wounds, so many slightly wounded soldiers were seen in the convoys near the battle-fields, or from among those who had been removed from the field to the hospitals in the rear, that military correspondents and many surgeons received the impression that bullet wounds in this campaign were uniformly slight.

According to Delorme, this impression was not correct. Bullets from the rifles now used cannot produce invariably slight lesions, except in the region traversed. The lesions are simple, benign, severe or very grave according as the projectile comes from a distance or close at hand. All degrees of injuries can be made by the same sort of projectile in the same battle; it is a question of velocity and range. Explosive effects have been observed from bullets fired at short range; wounds made at intermediate distances have been severe, especially when the diaphyses of the long bones

have been hit. At greater distances the wounds are correspondingly light. In the Thracian campaign the most effective ranges for the Bulgarians have been the short and the intermediate ranges, at which they have inflicted serious and very severe wounds on their adversaries. The Turks, at least at the beginning of the campaign, fought from a distance. This often proved a benefit to the Bulgarians, who profited also in a more general way from the less vulnerable character of the Turkish bullet (the German S ball), owing to its lighter weight and the point, which permitted it to penetrate and pass through the tissues more as a puncture than by punching through and making an abrasion. This bullet made slighter lesions than the Bulgarian. The aperture was more restricted, its course of less diameter, the perforations in the epiphyses cleaner, and penetrations of the skull, chest and abdomen perhaps less severe. Perforations of the large diaphyses of the bones, which are of the greatest concern to army surgeons, are as a rule less comminuted; the area of free splintering is more circumscribed and the fissures smaller. Shock is slight or negligible, even at close range.

At the beginning of the war the severity of wounds from bursting shells was exaggerated. The truth is that the penetrating power of shrapnel is less than that of rifle-balls. Owing to the shape and the lower velocity of the missiles they produce lesions different from those made by rifle-balls: larger, but not so deep, often complicated by the presence of the wounding body and by bits of clothing; fractures are simpler and less comminuted, but more exposed to suppuration.

It has been admitted that the losses sustained by armies have been decreasing since the beginning of the last century, according to the numbers engaged. The Balkan war and the war in Manchuria were exceptions to this rule and should alter the wide-spread wrong impression as to the general benign character of wounds made by rifle-balls.

Fear of the Competition of Foreign Practitioners

For some time certain physicians have been protesting at the continual increase in the number of foreign medical students. The question was discussed at the recent meeting of the Associations corporatives des étudiants en médecine (THE JOURNAL, April 26, 1913, p. 1312). It was also taken up by the Syndicat médical de Paris. Dr. Roulland called attention to the insistent protests of German students. The demands made by the Germans are about as follows:

Only a limited number of foreign students should be permitted to matriculate in the schools.

A certificate of good character should be asked, signed by officials in the country from which the student comes.

A certificate should be required showing that the student has successfully passed an examination in German.

No foreigner should be admitted to any official position.

Dr. Roulland asked if the situation in France is analogous, and answered the question in the negative. He believes that foreign students should not only be welcomed, but should be invited; that our laboratories and hospital services should be opened for the purpose of giving instruction, and that this should even be given in the mother tongue of the visiting medical student. At the same time the students should be distributed in order that the Paris school might not be overcrowded. In 1903 at Paris French medical students numbered 3,100 men and 83 women; foreign medical students, 248 men and 70 women. In 1913 the French medical students numbered 3,291 men and 229 women; the foreign medical students, 564 men and 329 women. In other words, in ten years the number of French students changed little, but that of foreign male students increased two times and of women five times.

In view of this increase Dr. Roulland believes that it would be unsafe to admit foreigners and women freely to the examinations for internships and externships. He proposes to limit the number of foreign applicants to 5 per cent. more than the number required, and to consider the foreign applicants as supernumeraries and on a second list. The Syndicat médical de Paris adopted this proposition and at the same time voted that the privileges accorded to foreigners asking for the government doctorate of substituting equivalents for the regular requirements should be abolished as soon as possible by decree; that foreign students should be compelled to undergo the same examinations as French students for degrees, including the bachelor's, and that with the exception of internships and externships all the offices given at examinations or by appointment by the state or public administration should be reserved for natives exclusively. The *syndicat* also asks that medicolegal findings to be used in court proceedings and other documents of a public nature shall be valid only if signed by French physicians. The suggestion was made that naturalized physicians should not be permitted to acquire the same privileges as natives until after five years from the time of naturalization, but this restriction was not adopted.

It is doubtful if these apprehensions and precautions are justified by actual conditions. As I have already shown (THE JOURNAL, Aug. 31, 1912, p. 732), the majority of foreign students come to France only for instruction with no idea of obtaining the government doctorate, which alone gives the right to practice.

Dioradin Again

I mentioned in a previous letter (THE JOURNAL, Feb. 22, 1913, p. 608) the suit brought against Dr. Samuel Bernheim by Dr. Louis Dieupart, who had been ordered to prescribe Dioradin but had refused to do so and had therefore lost his position in a dispensary. The court decided against Dr. Dieupart, declaring that the administrative council of the dispensary had the undeniable right to impose on the physician the exclusive use of a product "which had given rise to no criticism by the medical profession." Since this decision might create a dangerous precedent, the commission on professional interests of the Syndicat médical de Paris took up the question. It was assumed that the judge was impressed by the documents submitted to him in the case — perhaps papers presented in various congresses according to which Dioradin possesses marvelous properties. His statement that the preparation was not criticized by the medical profession was therefore made in good faith. The judge, however, cannot be admitted to have the right to declare that a given product has curative properties on the pretext that the medical profession has made no protest against its use. Nothing authorizes such assumption. There are in fact a large number of products with regard to which the medical profession keeps silent and the properties of which are far from being demonstrated. A physician has always the right and the duty of prescribing only what he believes useful to the patient. This principle ought to be respected everywhere and by all. Accordingly the *syndicat* passed the following resolutions:

1. Each physician is alone responsible for and the sole judge of the treatment that he prescribes and of the medicines that he orders.

2. A chief of service in a public or private dispensary is master of the treatment that he directs and ought not in any case to be obliged to conform to a therapeutic course prescribed in advance.

3. The *syndicat* regrets that the court has denied this and protests energetically against the decision.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, April 18, 1913.

Sixth International Congress on Physiotherapy

The first topic was the treatment of disturbances of the circulation by physical measures. The leading addresses were by O. Müller of Tübingen, Vasquez of Paris and E. Zander of Stockholm.

TREATMENT OF CIRCULATORY DISTURBANCES BY PHYSICAL MEASURES

Müller spoke on the use of baths in circulatory disturbances. The most ordinary form of bath for these conditions is the cool carbonated saline bath, which acts on the heart as well as on the blood-vessels. The carbon dioxid and the salt excite the activity of the heart; the temperature of the bath affects the blood-vessels by dilating or contracting them and thus protects and exercises the heart. Very fine gradations of the temperatures and of the proportions of carbon dioxid and salt can be obtained. Cool carbon dioxid baths slow the action of the heart and make it more effective and uniform. At the same time they contract the arterioles in the periphery, increase the blood-pressure and dilate the arterioles in the internal organs, particularly in the abdomen, so that a deepening of the respiration takes place, which favorably influences the blood-current in the veins and is calculated to equalize the distribution of blood. The heart has to perform greater work through this change and is thus exercised. The thick layer of bubbles of carbon dioxid which surrounds the body prevents the giving off of so much heat as occurs in ordinary cold baths, so that in the carbon dioxid bath a pleasant feeling of warmth results. In the warm carbon dioxid bath

the pulse volume is increased, but the bath has the reverse effect on the arteries from cold baths. As a result the internal vital organs receive less blood, but the heart has a slighter task to perform; it is therefore protected. In the treatment one begins with baths of temperature midway between these two extremes, that is, about 93.2 F., and raises or lowers the temperature to protect or to exercise the heart, as desired. As the carbonated baths make considerable demands on the organism, it is absolutely necessary that they be given only under medical supervision. A course of carbonated baths at home, taken without interrupting the patient's occupation, is often injurious. Similar conditions to those of the carbonated baths are found in the electric baths and in those which contain bubbles of oxygen and air, which, however, have a milder action than the carbon dioxid baths.

Vasquez discussed the dietetics of disturbances of the circulation. He believed it possible by rational nutrition to influence the heart and vessels prophylactically in cases of permanent high blood-pressure from disease of the kidneys and arteriosclerosis. An increase of blood-pressure is produced to the highest degree by alcohol. This could not be demonstrated in other forms of diet. In the dietetic treatment of developed arteriosclerosis it is very important to restrict alcohol and to reduce the quantity of food taken as much as possible, and further to give salt-poor foods and little meat. In the more severe forms of the disease milk and vegetable diet must have the chief place. In milder forms of heart disease, special dietetic treatment is not necessary. In the severe cases the restriction of meat and the introduction of milk diet is to be recommended. The excessive use of liquids by patients with heart disease is not so well borne as the solid foods. It is possible to lessen the work of the heart in disturbances of the circulation by lessening the supply of liquids. If the heart disease is caused by disease of the kidney, the salt-free diet recommended by Widal and Strauss should be used.

Zander reported on the movement treatment in diseases of the circulation. In kinesitherapy a distinction must be made between active movements in the joints and passive movements in the tissues. The combination of various manipulations is characteristic of the Swedish method. Massage acts on the circulation to the extent that it favors the movement of the blood and lessens the work of the heart. Local edema can be influenced favorably by massage. This form of passive movement may be compared in many respects to the gymnastic breathing exercises. The difference in the amount of blood in the lungs in inspiration and in expiration is quite marked, so that by the active respiration a suction of the blood into the chest and expulsion of it results, producing effects very similar to those of massage.

Active movements have a distinct influence on the circulation of the blood. If a muscle is doing its work it needs more blood than when it is resting. Muscular exercise requires therefore the sending of the blood from the internal organs to the extremities, which is therapeutically valuable in pathologic conditions characterized by excessive amounts of blood in the internal organs. Zander does not regard it as demonstrated that muscular exercise causes hypertrophy of the heart. At any rate, among athletes the findings are not uniform. The heart may become more powerful without undergoing hypertrophy. No physical exercise imposes such a task on the heart as valvular disease, which forces the heart to extreme exertion. By exercise and training the capability of the heart to accommodate itself to requirements is increased. A further possibility of producing compensation is to be found in the periphery; that is, in the muscles. In trained muscles the vessels react better than in untrained ones; but persons with heart disease cannot be trained in the same way as the healthy. The gymnastic exercises must not tax the brain, but should be as far as possible automatic and above all be adapted to the strength of the patient. Walking is especially to be recommended, but even this is too one-sided, as it calls into play only part of the muscles.

PHYSIOLOGIC EFFECTS OF ALTITUDE AND AIR-PRESSURE

Colnheim of Heidelberg discussed the physiologic action of altitude. In mountain altitudes the proportion of blood-cells increases in differing ratios in different animals. In the mountains an increased formation of red blood-cells and hemoglobin takes place; in healthy persons this is evident only after some weeks, but then in the course of months and years may prove very considerable. Experiments performed on artificially anemic animals show an immediate increase in hemoglobin. The influence of high altitude should be investigated not only on healthy men and animals but also on patients and sick animals.

Stähelin of Basel spoke on the influence of the daily variations in the air-pressure and the blood-pressure. Continuous tests of blood-pressure on patients with stationary pulmonary tuberculosis have shown that in the majority the blood-pressure falls on a sudden sinking of the barometer pressure. The cause of this sinking is not certain; but it is important that a generally measurable influence of a meteorologic factor has thus been established. In other diseases an influence of this sort is not shown, probably because the variations in blood-pressure produced by the disease itself conceal the effect of the weather.

LATENT DIABETES

Reicher of Schwarzburg-Morgentheim discussed the clinical balneotherapeutic relations of latent diabetes. There are many conditions difficult to explain which are to be referred to diabetes. Among these are especially neuralgia, sciatica, furuncles, itching of the skin and chronic eczema, diseases of the gums, carbuncles, phlegmon, cataract and unexplained loss of weight. In spite of the diabetes present, it may not be possible to demonstrate the sugar in the urine, but it can be shown to be present in the blood by the method of Reicher and Stein. These cases are designated as latent diabetes. They must be treated in the same way as other cases of diabetes, with dietetic measures and mineral waters.

VARIOUS THERAPEUTIC MEASURES

Klotz of Tübingen reported on the treatment of acute fall of blood-pressure with pituitary extract. The preparation causes in case of lowered blood-pressure an increase by exciting the contraction of the arterioles and at the same time increasing the activity of the heart. It is to be recommended in all cases in which a lowered blood-pressure is due to the relaxation of the blood-vessels in the splanchnic area, and also in acute loss of blood, operative shock and toxic lowering of blood-pressure. The combination with intravenous infusion of salt solution materially assists the action of the preparation.

Bruns of Marburg recommended breathing under reduced pressure for the treatment of disturbances of the respiration and circulation. The apparatus for respiration under reduced pressure produces a permanent difference between the pressure of the atmosphere on the surface of the body and the artificially lowered pressure in the lungs, and hence an increase in volume of the vessels in the lesser circulation, and a permanent fall of pressure that lessens the activity of the right heart. It is indicated in insufficiency of the respiratory organs and the disturbances of the circulation occasioned by it, and also in mitral disease, coronary sclerosis, stenocardia and fatty disease of the heart. In asthma it is a good method of respiratory gymnastics. In cases of anemia, also, this method has given good results.

Bergmann of Altona discussed the treatment of disturbances of the circulation by changing the pressure in the lungs. This method of treatment deserves marked attention as a protective treatment of the heart not only in cases in which decompensation is already established, but also as a prophylactic measure in cases in which compensation is still present. The distribution of the blood in the lesser circulation, the relative fulness and the amount of work put on the various sections of the heart and the circulation through the coronaries are modified by the changes of pressure in the air of the lungs in such a way that a suitable combination must be favorable.

Mache and Suess of Vienna and Ramsauer and Holthusen of Heidelberg reported on the absorption of radium emanation by human blood in inhalation and drinking treatments, which appeared to be suitable to introduce radium emanations into the blood and to keep them there for some time. Only medical and practical considerations are competent to determine which of the two methods is to be preferred. The possibility of exact dosage is in favor of the inhalation method, and the advantages of the drinking method are its great convenience and small cost.

(To be continued)

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, April 27, 1913.

The New Law Dealing with Epidemic Diseases

In Austria we have long had strict and exhaustive regulations pertaining to all matters of epidemic diseases of cattle and other animals, but no law dealing with the fight against such diseases if they attack human beings. All that has been

cene in this respect has been based on simple ordinances of several ministers. Finally by the united efforts of medical and non-medical men a bill was offered by the government, but it encountered much opposition. It was interesting to note how much politics can deteriorate a man's sound sense. For political reasons the law was attacked by medical men, or at least they thought they had to oppose it, in order to please their constituents. Needless to say, a desperate campaign was waged against the bill by the "nature healers" and antivivisectionists, seconded by the agrarian circles, who feared that the interference of the officers of health would be detrimental to the interests of the agrarian magnates, so often opposed to the interests of the general public. But after a severe struggle the law has been passed. It is yet far from fulfilling all that could justly be wished, but several important improvements have been attained. Thus, for instance, the compulsory notification of infectious diseases has been regulated; diphtheria, scarlet fever, all forms of epidemic and cerebrospinal meningitis, poliomyelitis, puerperal fever, typhoid, cholera, plague, anthrax, glanders, erysipelas, rabies and whooping-cough must be reported, while trachoma, measles, rubeola and mumps need not be reported, but should be. Doctors who suffer pecuniary loss through the application of the law will receive compensation, but the problem of compulsory vaccination, for instance, has not been solved.

The law contains five principal parts, providing for: (1) the discovery and notification of disease; (2) preventing and fighting disease; (3) the payment of costs and of compensations arising out of the application of the law to the individual, corporations or municipalities; (4) the fines for infringement of the law, and (5) general organization of the medical service in connection with the law. Some of these points are worthy of consideration. Thus the first point defines as notifiable only such diseases as appear temporarily in an epidemic way, while diseases commonly present, like tuberculosis and syphilis, are excluded. Every officer of health, practitioner or nurse called in for the first time to the case, must report it to the board of health of the district, unless it has been reported by some one else. The second part regulates the methods of isolation and disinfection, of the purification of the water-supply and the prevention of its contamination, the care of the food-supply and the prevention of contamination (especially in shops, markets and public sales and auctions). The closure of infected lodgings, the control of certain persons, the closure of schools, the control of itinerant venders and of traffic (quarantine) is also fully dealt with. The disinfection, for instance, has to be effected in lodgings with formaldehyd solution, to be used in the shape of gas, and by washing with a 1:20 solution of phenol (carbolic acid) or compound solution of cresol.

An important addition to the present state of affairs is the third chapter, which does away with the uncertainty of costs of prophylactic medicine. Special care is taken to ensure a pension for medical men or their families, in case of anything happening to them in this service; the nursing staff also is adequately provided for in this respect. The costs of the application of the law to fight epidemic diseases will be defrayed by the state, and a liberal arrangement will ensure promptness. Payment for notification of disease, which was desired by the profession, could not be obtained. Altogether the doctors were bound to accept the law, regarding it only as a payment on account, working under the idea that it was better than no law at all.

The Sale of Pathogenic Bacteria

A crime in a German town has called the attention of the public to the dangerous possibility of being poisoned with the aid of scientific institutes. A man had killed two wives and tried to kill a third one by the administration of living typhoid bacteria, which he had procured under false pretenses from the serotherapeutic institute in Vienna. This magnificent scientific state institution contains the largest and best-equipped collections of bacteria and all the latest outfits for their growth in a special department known as the "Kral Museum." Hitherto it has been easy to get quite a large supply of any pathogenic microorganism. The authorities in charge of the institute seem never to have realized that extensive precautions were necessary to prevent abuse on the part of their customers. A simple request by letter resulted in the mailing of carefully packed glass tubes containing any required bacteria, and the laboratories all over Europe which were regular customers of the Vienna institute will in future have to prove their good faith for procuring their goods before getting them. It has been decided now that only public scientific laboratories and medical men of recognized scientific standing will be regarded as competent to receive such dangerous weapons. In his former attempts the murderer had been lucky enough to avoid all suspicion, as he styled himself "chemical laboratory" on his letter-head, and in spite of repeated requests for fresh bacteria—he could have made fresh cultures himself if he had been really the owner of a laboratory—nobody thought of foul play.

Marriages

JAMES PAUL AUSTIN, M.D., Philadelphia, to Miss Margaret L. Thomas of Germantown, Philadelphia, April 26.

JOHN SCHAFER SCHNELLER, M.D., Catasauqua, Pa., to Miss Kathryn Johnson of Freeland, Pa., April 30.

GEORGE R. CLAYTON, M.D., Lima, O., to Miss Florence A. Foss Bailey of Highland Park, Ill., April 23.

SARAH ELLIS SWEZEY, M.D., and Prof. Harry Thompson Avey, both of Allahabad, India, recently.

ALBERT VANDER VEER, M.D., to Miss Sylvia A. de Murias, both of New York City, May 12.

ROBERT DORLAND PAUL, M.D., Chicago, to Miss Ethel Ericksen of Tacoma, Wash., April 28.

HENRY ISAAC LEVITON, M.D., Chicago, to Miss Theresa Lurkin of California, recently.

HERMAN M. BAKER, M.D., Stendall, Ind., to Miss Grace Sleno of Evansville, Ind., April 30.

HAROLD L. ROSE, M.D., Oglesby, Ill., to Miss Lena Penning of Chicago, April 29.

Deaths

Louis Adolphus Duhring, M.D., the eminent dermatologist of Philadelphia; died at his home in that city, May 7, aged 67. He was born in Philadelphia, and after his graduation from the University of Pennsylvania in 1867 and an internship of fifteen months in the Philadelphia Hospital, he went abroad, studying dermatology in Paris, London and Vienna. On his return to the United States in 1870 he opened a dispensary for skin diseases in Philadelphia. For ten years he was attending physician and since that time consulting physician to the dispensary. In 1871 he was made lecturer on diseases of the skin, and five years later professor in the University of Pennsylvania. He was a member of the Medical Society of the State of Pennsylvania, vice-president of the American Dermatological Association and a member of many societies connected with his specialty at home and abroad. His best known works are his Atlas of Skin Diseases which appeared in 1876; his Practical Treatise on Diseases of the Skin, which appeared a year later, and was translated into French, Italian and Russian, and his Text-book of Cutaneous Medicine, which appeared in 1898.

Francis Parker Kinnicutt, M.D. College of Physicians and Surgeons, New York City, 1871; a member of the American Medical Association; professor of clinical medicine in his alma mater; president of the Association of American Physicians in 1906-7; a member of the New York Academy of Medicine; attending physician at the Presbyterian Hospital, New York City; consulting physician to St. Luke's, the General Memorial, Women's and Babies', Minturn and Vassar Brothers' hospitals and to the Hospital for the Ruptured and Crippled; a director of the Children's Aid Society, and co-editor, with Dr. N. B. Potter, of the English translation of Sahli's Clinical Diagnosis; died suddenly May 2, from cerebral hemorrhage, just after he had completed the reading of a paper before the Practitioners' Society, New York City, aged 66.

Asbury J. Vance, M.D. Vanderbilt University, Nashville, Tenn., 1881; of Harrison, Ark.; a member of the American Medical Association; once president of the Arkansas Medical Society; a member of the American Association of Railway Surgeons and Association of Surgeons of the Missouri and North Arkansas Railroads; and local surgeon for that road at Harrison; a member of the State Board of Health and president of the Boone County Board of Health; died in a hospital in St. Louis, April 28, aged 56.

Arthur Ames Bliss, M.D. University of Pennsylvania, Philadelphia, 1883; a member of the Medical Society of the State of Pennsylvania; chairman of the section on laryngology and otology in the College of Physicians of Philadelphia and once president of the American Laryngological Association; consulting laryngologist and aurist to Chestnut Hill Hospital and the Hospital for Epileptics; for more than twenty years laryngologist and otologist to the German Hospital and Mary Drexel Home, Philadelphia; died at his home in Philadelphia, May 1, from acute nephritis, aged 53.

Edgar Garceau, M.D. Harvard Medical School, Boston, 1890; a member of the American Medical Association, French Association of Urology; American Urological Association; American Gynecological Society and many other learned bodies; surgeon to the Boston Dispensary; gynecologist to the Out-Patient Department of St. Elizabeth's Hospital and consulting surgeon to the Quincy Hospital; author of a standard text-book on "Tumors of the Kidney"; died in Boston, April 29, aged 46.

Frank James King, M.D. Starling Medical College, Columbus, O., 1894; a member of the American Medical Association; first president of the Grand Forks District North Dakota Medical Society and for three years treasurer of the North Dakota State Medical Association; for more than twenty years a practitioner of St. Thomas, N. Dak.; a well-known specialist on the eye and ear; died in a hospital in Rochester, Minn., April 29, from carcinoma, aged 48.

Charles Huntoon Knight, M.D. College of Physicians and Surgeons, 1874; a member of the American Medical, American Laryngological and American Therapeutic associations; consulting laryngologist to the Manhattan Eye, Ear, Nose and Throat Hospital, the State Hospital for Crippled and Deformed Children and Stony Wold Sanatorium; professor of laryngology in Cornell University; died at his home in New York City, April 29, aged 63.

Henry Swift Upson, M.D. College of Physicians and Surgeons, New York, 1884; of Cleveland, O.; a member of the American Medical Association and American Neurological Association; professor of neurology in the Western Reserve University; attending physician to Lakeside Hospital and consulting neurologist to St. Alexis Hospital; died in Rome, Italy, April 23, aged 53.

William Gomez Ward, M.D. University of Alabama, Mobile, 1895; a member of the Medical Association of the State of Alabama; surgeon for the Mobile Light and Railroad Company; for several years physician of Mobile County and a member of the city council of Mobile; died at his home in Mobile, April 23.

James H. Judson, (license, years of practice, Illinois, 1882); a practitioner for forty-seven years; assistant surgeon of the One Hundred and Forty-Second Illinois Volunteer Infantry during the Civil War; for many years supervisor and school director of his district; died at his home near Polo, April 28, aged 73.

Alexander E. Walker, M.D. Eclectic Medical Institute, Cincinnati, 1897; a member of the Nebraska State Medical Association; was found dead in his apartments in Union, Neb., April 25, from a gunshot wound of the head, aged 38. It is believed that Dr. Walker was murdered and robbed.

John Coert Dubois, M.D. New York University, New York City, 1855; acting assistant surgeon, U. S. Army, during the Civil War, with service under the Sanitary Commission; for more than fifty years a practitioner of Hudson, N. Y.; died at his home April 29, from senile debility, aged 81.

Jacob L. Noble, M.D. University of Maryland, Baltimore, 1876; a member of the Medical and Chirurgical Faculty of Maryland; formerly health officer of Caroline County, Md.; died suddenly at his home in Preston, April 29, from valvular heart disease, aged 63.

Charles Wallace Price, M.D. Medical School of Maine, Brunswick, 1875; a veteran of the Civil War, in which he served both in the Army and Navy; formerly a member of the State Medical Association; died at his home in Richmond, Me., April 25, aged 68.

Leonard Bailey, M.D. Eclectic Medical College of Pennsylvania, Philadelphia, 1857; some-time president of the Connecticut Eclectic Medical Association; died at his home in Middletown, April 29, aged 78.

James M. Pocock, M.D. Medical College of Ohio, Cincinnati, 1874; formerly an officer of the National Guard of Washington; died at his home in Colfax, Wash., April 19, from cancer of the stomach, aged 63.

James Reid Mitchell, Jr., M.D. Cornell University, New York City, 1908; a member of the American Medical Association; for three years a practitioner of Fort Worth, Tex., but for three weeks a resident of Dallas; died in his office in Dallas, April 12, from the effects of poison accidentally self-administered, aged 28.

Herman Kahn, M.D. Royal University of Würzburg, Bavaria, Germany, 1861; later district surgeon for the British Government in South Africa and staff surgeon in the Bavarian Army during the Franco-German War; died at his home in New York City, May 1, aged 79.

George Edmund Stackpole, M.D. Harvard Medical School, 1870; a member of the Massachusetts Medical Society; formerly a practitioner of Malden and Dorchester, Boston; died in a hospital in Brookline, Mass., April 22, aged 69.

Orlando Webb Sutton, M.D. Eclectic Medical College of the City of New York, 1891; for several years postmaster at Bath, N. Y.; died suddenly at his home in that place, April 25, from heart disease, aged 63.

Patrick Joseph Timmins, M.D. University of Georgetown, D. C., 1878; for more than thirty years a practitioner of Boston; died in the Carney Hospital in that city, May 4, from carcinoma of the liver, aged 62.

Mary Bridges Beattie Cornish, M.D. University of Toronto, Ont., 1906; later pathologist of St. Luke's Hospital, New Bedford; died at her home in Everett, Mass., April 24, two weeks after childbirth, aged 30.

Samuel M. Richardson (license, Ohio, 1896), a veteran of the Civil War and for more than half a century a resident of New Matamoras; died at his home, about April 23, from senile debility, aged 85.

Walter Scott Thorne, M.D. Bellevue Hospital Medical College, 1869; a member of the American Medical Association; died at his home in San Francisco, April 22, from chronic nephritis, aged 72.

John H. Grady, M.D. University of Louisville, Ky., 1868; formerly of Columbia, Ky.; a Confederate veteran; died at the home of his daughter in Quincy, Ill., April 22, aged 70.

James McBride Woods, M.D. Jefferson Medical College, 1863; for thirty-three years a practitioner of Toronto, Ont.; died at his home from the effects of a fall, April 24, aged 73.

George Alexander Williams, M.D. University of the Victoria College, Coburg, Ont., 1870; formerly of Bay City, Mich.; died in the State Masonic Home, Alma, April 29, aged 69.

James Fisher Whittaker, M.D. Starling Medical College, Columbus, O., 1879; for thirty-three years a practitioner of Bloomingdale, O.; died at his home, April 30, aged 72.

Robert Spearman Edwards, M.D. Medical College of Georgia, Augusta, 1862; of Trussville, Ala.; died at the home of his son in Brighton, Birmingham, Ala., April 29, aged 65.

Eddy Bert, M.D. University of Göttingen, Germany, 1864; for many years a member of the American Medical Association; died at his home in Chicago, May 8, aged 72.

John W. C. O'Neal, M.D. University of Maryland, Baltimore, 1844; a veteran of the Civil War; died at his home in Gettysburg, Pa., April 24, from senile debility, aged 92.

Lee Roy Moore, M.D. Memphis Hospital Medical College, 1908; was found dead in his office in Brunswick, Tenn., April 28, from an overdose of chloroform, aged 30.

Conrad P. Strauss, M.D. College of Physicians and Surgeons, Baltimore, 1887; died at his home in Baltimore, May 2, from carcinoma of the throat, aged 47.

William Silliman Irwin, M.D. University of Tennessee, Nashville, 1906; of Falfurrias, Tex.; died in San Antonio, Tex., March 28, from heart disease, aged 35.

Octavius B. Schmall, M.D. Medical College of Indiana, Indianapolis, 1882; of Cincinnati; died in the Longview Hospital in that city, March 3, aged 59.

William B. Spain, M.D. Vanderbilt University, Nashville, Tenn., 1907; died at his home in Talbotton, Ga., April 26, from heart disease, aged 28.

Benjamin W. Pratt, M.D. Columbus (O.) Medical College, 1882; died at his home in Goodland, Ind., April 15, from pneumonia.

Pembroke S. Edwards, (license, 9 years of practice, Michigan, 1900); died at his home in Grand Rapids, May 1, aged 76.

Ruffin Cole Claiborne, M.D. Tulane University, New Orleans, 1903; died at his home in New Roads, La., April 27, aged 33.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

COLLYRIUM-WYETH

"I should be glad of any information about Wyeth's Collyrium and would also like to know if the position taken by this concern measures up to the requirements of the Council on Pharmacy and Chemistry."

This inquiry was received from a Boston physician, who enclosed with his note the letter quoted below that he had received from John Wyeth & Brother, Philadelphia, the makers of the preparation in question:

"We have your letter of the 22d inst., in which you request us to send to you formula for 'Collyrium,' and in reply thereto, beg to advise, being a corporation you will, we think, appreciate why we are not at liberty to disclose the various formulas under which our preparations are made. Such is the competition in the trade that secrecy in this respect is a valuable asset.

"You will not for a moment think that we take this position through any distrust of your discretion or good faith, but because we feel that our duty to the stockholders of the company prohibits us from disclosing our formulas.

"Let us assure you however, that the eyewash contains only the simplest and most harmless remedies well known to the medical profession."

John Wyeth & Brother seek the patronage of the medical profession and desire physicians to use their preparations, but "being a corporation" they "are not at liberty to disclose the various formulas" of these preparations. In other words, they expect physicians of the country to prescribe "patent medicines" of whose composition they must be ignorant and to rely wholly on the word of John Wyeth & Brother as to the innocuousness of these products.

The letter is an insult to the physician to whom it was written. If physicians were not so apathetic in cases of this kind, the corporation of John Wyeth & Brother would long since have been forced "off the fence"—it would have become either a "patent medicine" concern or would have confined its activities to the manufacture of pharmaceutical products and ethically exploited proprietaries. Now what about this Collyrium-Wyeth. It was analyzed in the Chemical Laboratory of the American Medical Association and the chemists report:

"The specimen of Collyrium-Wyeth examined was a clear, colorless liquid having a faint odor like benzaldehyd. Qualitative tests demonstrated the presence of antipyrin, free boric acid and sodium borate. Acetanilid, ammonium salts, glycerin, nitrates, phosphoric acid and pyramidon were absent. Such potent alkaloids as atropin, cocain, homatropin and pilocarpin, which are often used in ocular surgery, were not found. Preparations of goldenseal were not present. Quantitive examination indicated that the composition of the preparation examined is essentially as follows:

Antipyrin	0.41 gm.
Sodium borate (borax)	0.55 gm.
Boric acid	2.14 gm.
Water (by difference) to make	100.00 c.c.

The secret of such a formula must indeed be a "valuable asset!" We venture the assertion that if the medical profession did its duty, the corporation of John Wyeth & Brother would find that its "duty to the stockholders of the company" constrained it to abandon secret "patent medicines" and to confine its activities to a legitimate line of pharmaceutical products. An examination of the firm's pricelist reveals but a very few secret-formula preparations of the type represented by Collyrium, hence it would probably not seriously damage the business of the firm either to eliminate all such formulas from its pricelist or to enable the physician to use them intelligently, if they deserve it.

THE PROPRIETARY EVIL IN GREAT BRITAIN

Here are some excerpts from testimony recently given before the Select Committee of the House of Commons on proprietary medicines. It is Mr. E. J. Parry speaking. Mr. Parry, who is a lawyer and a consulting analyst, appeared before the committee in behalf of the "patent medicine" interests. Regarding the large pharmaceutical manufacturers and their detail men, pharmaceutical journals report his testimony thus:

"The education of a large number of practitioners in regard to the use of drugs depended on the firms which made the drugs, their travelers [detail men] and their literature. An enormous amount of money was spent on travelers doing nothing but call on doctors to induce them to prescribe the various remedies of particular firms, to keep them up to pitch, and to prevent their forgetting the remedies. What was advertised to the profession was not the ingredients and their virtues, but the particular excellence of the method of combining them. With great respect to medical men, he thought they were exceedingly credulous with regard to these articles. Doctors were quite susceptible to being talked over by the travelers. They persuaded the doctors that their substance was better than those of twenty other firms, although, as a matter of fact, it was identical."

Later in the examination, the chairman of the committee questioned Mr. Parry. Thus:

THE CHAIRMAN: What would be your own view of the ethics of the matter if you are suffering from some ailment or disease which has not yielded to ordinary treatment, and you go to a doctor, and he doses you with a drug given him by the traveler [detail man] to some firm, and of the nature of which he himself is ignorant?

MR. PARRY: The doctor may be ignorant to some extent, but I think he knows generally that when people spend money and time to bring these things before his notice there is a *prima facie* reason for believing that they will do some good.

THE CHAIRMAN: Are you ready to be dosed under these circumstances with something which was merely to be recommended to the doctor by a traveler?

MR. PARRY: I am only putting my standpoint. I have nothing to do with the ethics of the question.

And here is another gem:

THE CHAIRMAN: Do you really believe that doctors prescribe secret remedies of the composition of which they know nothing?

MR. PARRY: Yes; take the case of Antikamnia, which has been sold very largely and almost entirely on the prescription of medical men. Phenalgin is another case; yet if acetanilid is sold as Daisy Powder they condemn it.

THE CHAIRMAN: Then you really think that medical men do prescribe to their patients very largely medicines of the value of which they are ignorant?

MR. PARRY: Yes, to a considerable extent. There is the case of Aletris Cordial. Under that name an American firm brought out a remedy with only a general indication of what it was. Its reputation has been built up by British medical men prescribing it.

All of which makes interesting, if unedifying, reading.

DIATUSSIN

Dr. I. Fleiss, New York, writes:

"Please state the value of Diatussin, of Bischoff & Co., in pertussis. Since pertussis is such an intractable disease, anything which promises improvement is apt to attract the physician's attention. Is the 1913 edition of the N. N. R. out?"

According to an advertising circular, issued by E. Bischoff & Co., purporting to be a "reprint from the *Munich Medical Weekly*," Diatussin is " . . . . a dialysate of Herbæ Thymi and Pinguiculae." The latter is said to be known in the Alps as "blue fatweed." The only further information as to the composition of this preparation is the statement that

"the dialysate of this blue fatweed is said by the manufacturer to contain a proteolytic ferment." The writer of the article recounts how, after trying a host of remedies, he finally had such success in the treatment of whooping-cough that " . . . a whole procession of mothers with children affected by whooping-cough came to me from a neighboring village, only because several children from this place had been quickly cured by the dialysate." Nevertheless, while the "procession of mothers" appears to have been impressed by the virtues of Diatussin, the writer of the article, rather modestly for contributors of this sort, admits that "I am, of course, well aware, that the small number of cases under my observation allows of no decisive conclusion; it is only the object of these lines to interest a wider circle in tests."

New and Nonofficial Remedies, 1913, has been issued and will be sent postpaid on receipt of 25 cents for a paper-bound copy and 50 cents for a cloth-bound copy.

Association News

THE MINNEAPOLIS SESSION

Exhibit Illustrating Medicinal Plant Cultivation

Among the interesting features of the scientific exhibits to be given at the Minneapolis session of the American Medical Association will be a medicinal plant garden and a pharmacognosy plant laboratory presented by the staff of the College of Pharmacy of the University of Minnesota. These exhibits will be in charge of experts during the entire session and will be arranged in the Laboratory of Pharmacology, Room 201, Millard Hall. In the same room, exhibits of experimental work in the department of pharmacology and of instruments and apparatus devised in the department of physiology will also be placed.

Other details concerning the Minneapolis Session were given in the illustrated convention number of THE JOURNAL, May 10.

Correspondence

Advantage of Including the Indian Service in the Proposed Department of Health

To the Editor:—I have read the text of the Owen bill as published in THE JOURNAL (April 26, p. 1320) and am heartily in favor of its provisions. I think, however, that there is one important omission. By all means, it seems to me, the medical department of the U. S. Indian Service should be taken over by the new Department of Health. There are many reasons why this should be done.

In the first place, the Indian Medical Service, taken as a whole, is wofully inefficient and is not getting results commensurate with the money being spent or the work being done; and this does not mean that the Indian Service doctors are either overpaid or overworked. It simply means that even the small salaries paid and the small amount of work being done are largely wasted because the whole effort is misdirected. The medical service furnished to Indians should be mainly along the lines of sanitation and preventive medicine. The present plan of employing physicians of more or less mediocre ability to do a general practice among camp Indians, neglecting the larger questions of sanitation and hygiene, is a narrow policy, to say the least, and nothing proves its futility more than the rapid spread among Indians of tuberculosis, trachoma and other serious though preventable diseases. The following quotation is from a report recently made on this subject by the Public Health Service:

"The relief of suffering and the cure of disease are necessary, and provisions made to this end are commendable, but under present conditions their application is discouraging and does not approach the problems of sanitation among Indians. The curative effects aimed at . . . are largely nullified by the conditions under which the work is attempted and by the indifference of the primitive Indian and his ignorance of the first principles of hygienic living.

"It was the common observation that many of the medical officers of the Office of Indian Affairs were working hard, but a great deal of their really hard work is wasted."

By the absorption of the Indian Medical Service into the Department of Health the work could be organized and directed along more effectual lines; and the questions of better and more uniform salaries and of promotion for efficient service could be adjusted. These improvements would render the service more attractive and better men would be brought into it.

That these very desirable ends will ever be accomplished under the present system is improbable. Take the question of salaries for instance. Usually a lump sum is apportioned to each school or agency; this the superintendent in turn apportions as he sees fit among his different employees. The less he pays the doctor the more he will be able to pay some other employee, or the greater the total number of employees he will be allowed. The result invariably is that he keeps the physician's salary down as low as he dares. In fact, the Indian Office often not only encourages him to do this, but actually compels him by refusing to ratify any increase he may be disposed to give the physician. The low-salaried physician, usually located in some out-of-the-way place and seeing the general futility of the work, soon becomes dissatisfied and joins in the continual and interminable wrangle for transfer, each man feeling that any change would be acceptable.

Last, but by no means least among the advantages to be gained by transferring the Indian Medical Service to the Department of Health would be the removal of these physicians from under the jurisdiction of lay superintendents. These superintendents are more or less ignorant of medical matters and have no true conception of the relative importance of medical work, especially that of a sanitary nature; yet they have full authority over the doctors of the service, pass on their efficiency and merit and think nothing of interfering in their work. In my experience this has been especially true with regard to questions of vaccination and quarantine. One of the present Indian Service supervisors even openly opposes vaccination against small-pox.

In conclusion, another short quotation from the report cited above will be appropriate:

"The physicians conducting the work on many of the reservations see no encouragement, their life is isolated, their pay small, their hope of promotion less and their authority to attack real problems limited . . . but among the other governmental medical corps the medical officers, by reason of definite organization and hope of advancement, are filled with enthusiasm and *esprit de corps* which is necessary to success in any great coordinated work."

GEORGE W. WIMBERLY, M.D., Physician, Yakima Agency, Fort Simcoe, Wash.

Registration (!) in Mexico

To the Editor:—In view of Dr. W. G. Hathaway's request for information as to laws regulating the practice of medicine in Mexico, in THE JOURNAL, April 19, 1913, p. 1247, my experience may be of interest. I graduated from Jefferson Medical College, Philadelphia, in 1898. I made an attempt to comply with the laws of the state of Coahuila regarding the practice of medicine. I began to obtain the desired information or certificates in the latter part of 1910, and quit in disgust in 1912 after spending between two and three hundred dollars and obtaining no results whatever. I employed a lawyer and sought advice from the American consul, who directed me to "Judge" ———, "who was very reliable and would give me all necessary information." Later on I discovered that he was a judge, but a judge of bull fights.

This so-called judge directed me to a notary public, who stated that all that was necessary for me to do to comply fully with all laws was to have my certificates registered in his office, for which he charged me $64.40. This registration I discovered was not worth the paper it was written on—a pure skin game. Then I forwarded all my papers to the governor or secretary of the state of Coahuila, who held them quite a while without replying to my numerous letters regarding them. At last they were returned with the statement that a new law had been passed the day before which made all of my certificates void, and that it would be necessary for me to obtain new ones, notwithstanding the fact that all the necessary certificates had been in his hands two months or more before the new law was passed.

After I obtained new certificates complete from the medical college, Mexican consuls, Secretary of Foreign Relations, etc., three distinct times, going through all red tape and hot air, they informed me that this was not sufficient. This was all I could ever get out of them: "Not sufficient." They absolutely refused to state what was lacking, and no lawyer or any one else could enlighten me on the subject.

The truth of the matter is that on paper it is very easy to obtain registration in Mexico, but in practice almost an impossibility for an American, as the Mexicans do not want American physicians in that country and they will do anything to hinder and disgust them in trying. I was informed that as a last resort they would state that it was necessary to forward my diploma to the state capital, and that if I should be so foolish as to do so it would be reported as lost, that I would never have the pleasure of seeing it again.

I should be pleased to hear from other victims of this practice, with suggestions for practical relief.

C. R. BYARS, M.D., Bay City, Tex.

"A New Operation for Hemorrhoids"

To the Editor:—In THE JOURNAL, April 12, 1913, p. 1154, Dr. R. A. Bachman describes his operation under this heading. For a number of years I have operated with the best results as follows:

The instruments used are one pair of "mousetooth" forceps, a pair of pocket scissors and a half-curved needle; the material, chromicized gut or silk. The sphincters being dilated and the pile-bearing ring rolled out, the forceps grasp the posterior portion of the mucous membrane on one side, the threaded needle is introduced into the intestine above the ring, carried at right angles under it, care being taken not to include the sphincter, and is brought out at the mucocutaneous junction. The scissors now cut through both layers of mucous membrane about 3/16 inch distally from the suture, at right angles to it, and it is immediately tied. This is repeated every ¼ inch until the "12 o'clock" (Dr. Bachman) is reached. This procedure is repeated on the opposite side. The dressing is done with orthoform powder, tube, etc.

This operation is simple and is attended by a minimum of hemorrhage; six sutures are usually sufficient; accurate apposition is obtained; it gives as little pain as any other, and the results are splendid.

S. IGLICK, M.D., Orland, Cal.

The Waste of Inadequate Support of Health Departments.—It costs the people of Kentucky about five millions of dollars every year to maintain their county organizations to look after the observance of statute laws. They pay willingly about the same amount to support their ministers, their churches, etc., to maintain the spiritual laws, and yet in most counties of the state there is less than seventy-five dollars spent each year to support county boards of health which, properly equipped at a cost not exceeding five thousand dollars for each county, would save them enough money, paid as tax to doctors, druggists, nurses, and undertakers and loss of time, to pay all the running expenses of their counties and the state, besides saving them from the mental and physical distress of unnecessary illness.—W. L. Heizer in *Kentucky Med. Jour.*

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

OZONE IN TREATMENT OF GLYCOSURIA

To the Editor:—In THE JOURNAL for April 26, 1913, p. 1332, is an abstract of an article in the *Presse médicale*, by Labbé and Pérochon, on the treatment of glycosuria by ozone. The statement is made that a woman of 66 "had 150 or 200 gm. of sugar to the liter of urine and this became materially reduced under the ozone treatment and her severe pruritus became very much improved."

Is there not some error of observation here? Is it possible for the kidney to excrete a urine containing 20 per cent. of sugar?

Is there any evidence to justify the belief that the inhalation of ozone can materially reduce such an enormous percentage of sugar? Would it be possible for a human being to inhale a sufficient amount of ozone to oxidize the amount of sugar contained in a liter of urine if the proportion of sugar were 20 per cent.?

S. B. R.

ANSWER.—Critical examination of the original article indicates that it was not worth abstracting and should not have been abstracted. It gives no account of technic or of dose, and so-called "results" are recorded in an extravagant and, at the same time, very indefinite way.

Our correspondent is quite right in calling attention to the improbability of an output of sugar equivalent to 20 per cent. of the diabetic urine. The content of glucose in the kidney secretion may, in rare cases, reach 10 per cent. which is, as far as we can learn, the limit set by actual clinical experience.

There is no occasion to discuss the probability of the ozone which can be inhaled from fifteen to thirty minutes per day—or even for decidedly longer periods—being able to destroy the amount of sugar reported to have disappeared, or even much smaller amounts within the range of physiologic experience. Investigators have ceased to attempt to enhance the oxidative capacity of the organism by such methods. The French authors assume that "nascent oxygen" attaches to the red corpuscles in some subtle way and is thus transported in greater abundance to the tissues, thereby increasing the utilization of carbohydrates. As a matter of fact the metabolic defect in diabetes is not a deficiency of circulating oxygen; this is rarely found wanting in any condition in which respiration is unimpaired. The entire description in the article inadvertently abstracted by THE JOURNAL from the *Presse médicale* is tinged with untenable and fanciful physiologic incongruities and therapeutic nonsense. In the absence of dietary details it is not even possible to entertain a serious critique.

The question of ozone was discussed in the editorial "Ozone Myths," THE JOURNAL, Feb. 10, 1912, p. 412.

DRAINAGE OF ASCITES INTO SAPHENOUS VEIN

To the Editor:—With reference to the article on "Direct Drainage of Ascites into Saphenous Vein," by Dobbertin, abstracted in THE JOURNAL, April 26, 1913, p. 1333, I should like to ask: Are any measures taken to fix the vein in the peritoneum or to keep the end of the vein from collapsing and closing? How much curve is given the vein when it is pulled up into the tunnel made for it? Which saphenous is employed? What site is chosen for entering the peritoneum? M. L. HILLSMAN, M.D., Little Valley, N. Y.

ANSWER.—Under local anesthesia two incisions are made, one below Poupart's ligament which exposes the saphenous vein, and the other above the ligament in the region of the external inguinal canal, for the transplanting of the stump of the saphenous vein into an opening made in the peritoneum. After the saphenous vein has been exposed it is ligated and divided about two inches from where it empties into the femoral vein. The stump of the saphenous vein is then drawn upward through a tunnel made under Poupart's ligament and out through the second incision made just above Poupart's ligament. A small triangular peritoneal flap is raised and into the opening thus made, the stump of the saphenous vein is sutured, and the peritoneal flap is dropped over the vein and sutured to it. The abdominal muscles which have been separated but not divided in the exposure of the peritoneum at this point, are kept from constricting the opening of the vein by being drawn downward with a few catgut anchor stitches. In this way the fluid in the peritoneal cavity flows through the stump of the saphenous vein into the femoral vein and thence into the general circulation. The author advises performing the operation on one side first and then, if necessary, doing it on the other side later. The peritoneum is entered between the external abdominal ring and the edge of the right rectus muscle.

THE LUETIN REACTION—TYPEWRITTEN PRESCRIPTIONS

To the Editor:—I would appreciate answers to the following: 1. What is the technic of the luetin reaction? 2. How is the antigen made? 3. Will it keep? 4. What is the reliability of the reaction? 5. Is it suitable for the use of a private practitioner? 6. Is it permissible to typewrite prescriptions? READER.

ANSWER.—1. The luetin reaction is made like the von Pirquet test with tuberculin—much like ordinary vaccination.

2. The antigen is an extract prepared from at least six strains from the *Spirochaeta pallida*, thus securing a polyvalent antigen. The material is placed in a porcelain jar and ground by means of marbles in a shaking-machine. The emulsion thus obtained is carefully transferred to a sterile bottle heated to 60 C. (140 F.) for thirty minutes, and 0.4 per cent. phenol (carbolic acid) is added. For further details regarding the luetin test see Hideyo Noguchi's article, "Experimental Research in Syphilis," THE JOURNAL, April 20, 1912, p. 1163.

3. We find no statement with regard to its keeping properties, but judge that the antiseptic used would preserve it for a considerable length of time.

4. The reaction appears to be positive in most cases of tertiary syphilis. It is not so reliable in primary and secondary syphilis. In these forms the Wassermann reaction, or the Noguchi modification of it, is to be preferred.

5. There are no contra-indications to its use by a private practitioner. Only in a few cases have any general symptoms been reported.

6. Yes. The use of the typewriter for writing the body of the prescription is not only entirely permissible, but highly laudable, for obvious reasons; every prescription should have autographic signature, however. There are typewriters which are fitted with the types for the necessary symbols.

CARREL ARTICLES ON PRESERVATION OF LIVING TISSUES OUTSIDE THE ORGANISM

To the Editor:—Can you furnish me with references to the literature concerning the preservation of living tissues by Dr. Alexis Carrel? R. A. ROBERTS, M.D., Kansas City, Kan.

ANSWER.—The following literature can be consulted on this subject:

Carrel, A., and Ingebrigtsen, R.: Production of Antibodies by Tissues Living Outside of the Organism, THE JOURNAL, Feb. 17, 1912, p. 477.
Carrel, A.: Technic for Cultivating Large Quantity of Tissue, *Jour. Exper. Med.*, April, 1912.
Carrel, A.: Permanent Life of Tissues Outside of Organism, *Jour. Exper. Med.*, May, 1912.
Carrel, A.: The Preservation of Tissues and Its Application in Surgery, THE JOURNAL, Aug. 17, 1912, p. 523.
Carrel, A.: Pure Cultures of Cells, *Jour. Exper. Med.*, August, 1912; abstr., THE JOURNAL, Aug. 17, 1912, p. 576.
Carrel, A.: Visceral Organisms, THE JOURNAL, Dec. 14, 1912, p. 2105.
Carrel, A.: Artificial Activation of Growth in Vitro of Connective Tissue, *Jour. Exper. Med.*, January, 1913.

EARLY CORRECTION OF PROGNATHOUS MANDIBLE

To the Editor:—My little son, 3 years and 5 months old, has a deformity of the face—his lower teeth close in front of the upper teeth, instead of behind them as they should. My dentist says that some orthodontic work will have to be done, but that it must wait until the permanent teeth come. Why would it not be better to have it done at once? INQUIRER.

ANSWER.—Provided all the teeth are sound and the child's physical condition good, it is advisable to commence the correction of the deformity at the earliest age possible; that is, as soon as practicable after the eruption of the temporary set of teeth. The reason for early interference is that the bones are more pliant in childhood, and therefore the deformity is much more easily corrected. This work requires considerable skill for its performance, more than is possessed by a considerable number of general practitioners of dentistry.

THE TERMS "LYMPH-NODE" AND "GLAND"

To the Editor:—In an article on diphtheria (Lind, S. C.: Atypical Pharyngeal Diphtheria, THE JOURNAL, May 10, 1913, p. 1412), I note that the author refers to the submaxillary swelling as submaxillary "lymph-nodes." Are these not usually known as submaxillary "glands"? How shall one know when to say "glands" and when to say "nodes"? S. L. B

ANSWER.—A gland is a secreting organ. A node is a circumscribed mass of differentiated tissue, but is not a secreting organ. A lymph-node (or knot) is an encapsulated nodular aggregation of lymph tissue interrupting the course of lymph vessels, without a secreting function, and therefore cannot be designated as a gland, although it is often called a lymph-gland. The term "node," on the other hand, is often used when nodosity is meant, the latter being distinctly a pathologic condition. "Lymphaden" has also been used to designate these masses of lymph tissue, and from it the pathologic term "lymphadenitis" takes its origin. The B. N. A. gives to these structures the name "lymphoglandulae." Structurally, the term "lymph-node" is the correct one, not "lymph-gland."

The submaxillary glands are the salivary glands, whereas the submaxillary lymph-nodes are lymph-tissue structures or nodes. There are two submaxillary glands and from six to twelve submaxillary lymph-nodes. The latter are found in the superficial layers of the sheath of the glands, but not inside the sheath.

TYPHOID VACCINE AND A NURSING MOTHER

To the Editor:—1. Is there any contra-indication to using typhoid vaccine in a nursing mother?
2. What effect, if any, will it have on the nursing child?
3. Is this vaccine useful in the treatment of typhoid?
G. W. JOHNSON, M.D., MacAlpin, W. Va.

ANSWER.—1. The fact that the mother is nursing an infant is not a contra-indication to the use of this vaccine. If a febrile reaction ensues, however, it would be wise to stop the nursing temporarily.

2. Antibodies will pass into the milk, but it is doubtful if enough would be absorbed by the child to afford protection for any considerable length of time.

3. The use of typhoid vaccine for treatment of typhoid fever is still in the experimental stage. Favorable results have been reported in some cases, but this treatment has not been tried in a sufficiently large number of cases to warrant a definite answer as to its value.

PHYSICIANS' STUDY TRAVEL TOUR ABROAD

An answer to a correspondent appeared in this department April 5 on this subject. A letter has been received from Dr. J. M. Anders, Philadelphia, chairman of the American Society for Physicians' Study Travels, informing us that he will not arrange a tour abroad this year. This organization is planning systematic work in the future, but for this year Dr. Anders is turning all correspondence over to Dr. Richard Kovács, 236 E. Sixty-Ninth Street, New York City, who is organizing a travel study tour. Dr. Anders says that he is doing this without assuming any responsibility for the character or success of this year's tour.

CRACKLING IN THE TEMPOROMANDIBULAR JOINT

To the Editor:—I have three cases in which the lower jaw is involved—a subluxation. When the patients bite or chew their food one can hear and feel the crackling. I have tried the ordinary external remedies but to no avail. Will you please advise me what other methods or procedures to follow, either medicinal or otherwise? E. J. OXFORD, M.D., Chambers, Neb.

ANSWER.—In the temporomandibular joint the "crackling" which may be heard and felt when a person is chewing is not caused by a subluxation, but is probably the result of unusually severe masticatory efforts or a low-grade arthritis. It usually disappears or resolves itself without treatment. Chronic subluxation can be relieved only by surgical treatment—an open operation.

THE CLINICAL THERMOMETER AS A VEHICLE OF INFECTION

To the Editor:—For years I have inserted a piece of cotton into my thermometer case and kept it saturated with pure phenol (carbolic acid), and I am quite sure that your layman correspondent (mentioned in Current Comment, May 10, 1913, p. 1467) would not care to look for his own thermometer if handed mine to make fit for use. This may not be ideal but it seems to satisfy my people and no harm has, as yet, come of its use.

W. H. WELLS, M.D., Monmouth, Ill.

TUBERCULIN THERAPY IN TUBERCULOSIS

To the Editor:—Is any preparation of tuberculin an established form of treatment for tuberculosis of the lungs? Has this form of treatment received the recommendation of the leading clinicians, and is it used to any extent in the treatment of pulmonary tuberculosis? A. I. LAWBAUGH, M.D., Calumet, Mich

ANSWER.—Tuberculin is used by a number of clinicians as an adjunct to the ordinary sanatorium treatment.

Miscellany

The Phenolsulphonephthalein Test of Renal Function

"Rowntree and Geraghty" (*Jour. Pharm. and Exper. Therap.*, 1910, i), said Emerson in 1911 (*Clinical Diagnosis*, 1911, p. 341), "have proposed a test for the functional activity of the kidneys which promises to prove the best yet suggested." Briefly the method consists of the injection of 0.6 gm. of phenolsulphonephthalein and 0.84 c.c. of half-normal sodium hydroxid solution in 0.75 per cent. sodium chlorid solution to which a few drops more of the half-normal sodium hydroxid are added to prevent irritation. Half an hour before administering the test the patient is given a few hundred cubic centimeters of water to insure free urinary secretion. It is desired to determine the time of the first appearance of the phenolsulphonephthalein in the urine, and the patient is instructed to void the bladder frequently into a tube of 25 per cent. sodium hydroxid solution in order that the earliest development of a pinkish tinge may be noted. Specimens are collected at the end of the first hour and at the end of the second hour. Usually the drug appears in the urine from five to eleven minutes after its injection. Each sample of urine is measured and the specific gravity taken. It is then placed in a 1-liter (1-quart) flask, and sufficient 25 per cent. sodium hydroxid is added to make it decidedly alkaline, thus eliciting the maximum color. Sufficient water is added to make up a total of 1 liter. This is thoroughly mixed and a small portion filtered and is compared colorimetrically with a standard used for all estimations. The standard colorimetric solution consists of 3 mg. of phenolsulphonephthalein (0.5 c.c. of the solution used for injection) diluted up to 1 liter and made alkaline by the addition of 1 or 2 drops of 25 per cent. sodium hydroxid. This solution is stable and retains its color for weeks.

Rowntree and Geraghty found in a series of normal cases that from 40 to 60 per cent. of the phenolsulphonephthalein is excreted after one hour, and that from 20 to 25 per cent. more are excreted in the second hour, making a total of from 60 to 85 per cent. They found that in acute nephritis the activity of the kidneys may fluctuate greatly in from twenty-four to forty-eight hours. In parenchymatous nephritis there is a marked decrease in the amount of phenolsulphonephthalein excreted, and also in chronic interstitial nephritis a low output was found in all cases.

In a later report Rowntree and Geraghty (The Phenolsulphonephthalein Test for Estimating Renal Function, THE JOURNAL, Sept. 2, 1911, p. 811), confirm their previous results and show that the test is of value in that it not only establishes uremia, but also indicates impending uremia when other signs are lacking. They conclude that the intramuscular injection is preferable to the subcutaneous. This work was confirmed by Boyd (Phenolsulphonephthalein and Functional Tests of the Kidneys, THE JOURNAL, March 2, 1912, p. 620), who examined a large series of cases, the test proving of great value in cardiorenal diseases in showing to what extent renal function was affected.

Continuing still further, Rowntree and Geraghty (The Phthalein Test: an Experimental and Clinical Study of Phenolsulphonephthalein in Relation to Renal Function in Health and Disease, *Arch. Int. Med.*, March, 1912, p. 284, abstr., THE JOURNAL, April 6, 1912, p. 1038), find that diuretics which stimulate the renal cells also stimulate the excretion of the drug, whereas those acting mechanically have no effect. Finally Geraghty (A Study of the Accuracy of the Phenolsulphonephthalein test for Renal Function, THE JOURNAL, Jan. 18, 1913, p. 191), has indicated that for practical purposes catheterization is unnecessary, one sample being collected after one hour and ten minutes, and another one hour later. The drug is best given ordinarily by intramuscular injection. When intravenous injection is made, specimens should be taken at fifteen-minute intervals. For practical work no colorimeter is necessary. The specimen may be placed in a tube and compared with a tube containing a known quantity of the drug, dilution being made until the two specimens are similar, and the percentage of excretion determined by simple calculation. The tests have been made in more than a thousand cases. In over forty cases post-mortem examination confirmed the conditions suggested by the test.

More recently Erne (*München. med. Wchnschr.*, 1913, xl, 510), has made a large series of tests, and his results as well as those of other observers whom he quotes seem to bear out fully the prophecy made by Emerson. Moreover, he has introduced several modifications which make the test better available for general use. The intragluteal injection was found much better than that proposed by the original observers of injection into the arm. The material used was made up according to a special formula of Autenrieth and Funk (*München. med. Wchnschr.*, 1912), and which is available in ampules ready for injection. A special colorimeter which is simple in use, so simple that tests may be made rapidly with but little practice, has also been designed.

By the examination of normal persons, Erne found that from 47 to 68 per cent. was excreted after one hour, and from 74 to 85 per cent. after two hours. In pregnant women he found disturbances in functional activity quite constantly both before and after birth, and particularly when eclampsia threatened. Phenolsulphonephthalein tests in a large series of cases showed in all a lowered excretion when renal lesions or disturbances existed. The occurrence of albumin and excretion of phenolsulphonephthalein, however, do not run parallel. In asthmatic cases, the phenolsulphonephthalein excretion was lowered at the time of the attack, thus adding support to the view that there is a relationship between intoxication from retained products and asthma, further borne out by the relief in such cases from the administration of hexamethylenamin. A comparison of the excretion of phenolsulphonephthalein with the amount of acetone and diacetic acid showed that when the excretion of the latter substances is increased the former is always decreased. Likewise the severity of the objective and subjective symptoms was proportional to the amount of the drug excreted.

Erne's study of this test in pregnancy has confirmed the earlier work of Goldsborough and Ainley (The Renal Activity in Pregnant and Puerperal Women as Revealed by the Phenolsulphonephthalein Test, THE JOURNAL, Dec. 10, 1910, p. 2058), who noted that pregnant women eliminate phenolsulphonephthalein more slowly than normally, and that in the last month of pregnancy the power to eliminate this drug may fall far below the limits set for non-pregnant women.

Erne has demonstrated by careful observations that no harm is done to the kidneys by injection of the drug; the test is simple, easy and short; the results are regarded as dependable and as more accurate than other methods, and, they show disturbances of function when the tests for albumin are doubtful. It would seem then that we have here a valuable means for the clinical study of renal activity. It would appear to be of special value to the surgeon when, for instance, the question is the justifiability of removing a diseased kidney. Here the urine may be obtained from each kidney by ureteral catheters, and the exact functional ability of the two kidneys estimated. The tests make it possible to select a time for operation when the kidneys are in good functional condition. From the medical point of view the test should prove of special value in acute infectious diseases in which nephritis often arises during the latter stages; indications for the use of proper measures may be secured before albuminuria occurs and uremia becomes imminent. In complicated toxic cases with doubtful diagnosis because of the trace of albumin often present in the urine, and of observations pointing to a bacterial poisoning, the test may aid in clarifying the situation.

Tobacco-Chewing and Snuff Habits Among Children.—It is the popular understanding that tobacco-chewing and snuff-dipping are common among both men and women in certain districts of the South. Stiles (*Public Health Reports*) has observed that these habits are quite common among children in the rural districts and in the mill towns. Children from 4 years up, in certain districts, are commonly in the habit of using tobacco in these forms. Stiles made an inquiry in a cer-

tain county, having in mind the relation between the tobacco habit and the presence of sanitary conveniences in the homes. Of a total of 127 boys and girls 31, or 24 per cent., admitted the use of snuff or tobacco. Of the 13 smokers (11 boys and 2 girls) 8 came from homes provided with sanitary conveniences. Of 20 tobacco-chewers (12 boys and 8 girls) 4 came from more refined and 16 from less refined homes. Of 17 snuff-dippers, 3 came from more refined and 14 from less refined homes. These statistics, though small, Stiles says are in harmony with his observations extending over many years. In an attempt to find a specific cause for the wide prevalence of the tobacco habit among children, he found, very curiously, that in a number of instances the habit had been recommended by ignorant physicians as a preventive of anemia. Stiles says that among the illiterate classes there is a geographically wide-spread folk belief that snuff-dipping and tobacco-chewing are preventives against anemia and that there can be no question that it has received professional sanction from the more ignorant rural physicians.

Genius and Errors of Refraction.—We are familiar with the attempt to prove by analysis of the autobiographic notes of men of genius that their philosophy has been tinctured by physical and mental distress arising from uncorrected errors of refraction. Be this as it may, there can be no question that the person with a high degree of myopia is apt to be introspective and studious because his defective vision prevents him from obtaining his pleasure as do other children, and, as we have seen, internal squint, which in 90 per cent. of the cases results from an error of refraction, may greatly modify the disposition of the child. While we all admit that eye-strain may occasion headache, mental depression and insomnia, few of us could recall cases in which the symptoms have been so profound as to lead to melancholia and suicide. That the sufferings thus produced may terminate in this tragic way is the claim of Pronger, Gould and other writers.—W. Zentmayer in *Ann. Ophth.*

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF POST-GRADUATE WORK, CONTRACT PRACTICE, LEGISLATION, MEDICAL DEFENSE, AND OTHER MEDICOLEGAL AND ECONOMIC QUESTIONS OF INTEREST TO PHYSICIANS

STATE REGULATION OF MARRIAGE

"The law of eugenics is this: like the seed is the harvest," says Dr. David Starr Jordan.[1] He further intimates that perhaps "love and initiative backed by good sense in choosing a wife" might be more effective in obtaining certain desired ends in the field of eugenics than would legislation for the same purpose.

Dr. Henry H. Goddard[2] objects to taking hasty steps in legislation with regard to eugenics, and suggests that present legislation be limited to devising a means for classification with regard to the present health status of a given community. By this means, he feels that a more thorough investigation can be made as to the result of certain marriages on which further legislation may be based, if such be deemed expedient. It is said[3] that there is no normal standard by which a defective or unfit person can be judged or to which he can be compared, and the question is asked, Where is the condemnation process to begin and end, who is to judge who the defective is, and what constitutes a defect, warranting an operation or the forbidding of marriage?

Again, it has been submitted[4] that the problem to-day is one of environment and not of marriage regulation; that the healthiest of persons can deteriorate in improper surroundings. Another editor says[5] "Let the slums be broken up, the rookeries be pulled down, young boys taken out of 'gangs' and provided with clean sport and honest work, and Nature will do the rest . . . the moral life of the world to-day is richer and finer than it ever was."

And, further, it has been argued that the right to procreate and propagate the species is an inherent one, identical with life itself, and that to abrogate this right is to do violence to a God-given natural right, which no constitution, government or law may rightly and safely take away; and that while the law may provide for the taking of life for life in defense of community life, no law can rightfully be enacted to curtail the right of the individual to reproduce, except perhaps as a punishment for statutory rape.[6]

The constitutionality[7] as well as the futility of such legislation is brought into question by the assertion that "such measures to be valid must provide a right of appeal, and that a trial by jury must be accorded." The latter, it is asserted, would be almost impossible, "as the man in the street is not influenced to any extent by the higher-plane ideal, since, usually, he is swayed by the facts of life and is withal distrustful of disinterested fervor."

John Stuart Mill[8] has said that ". . . the sole end for which mankind are warranted individually or collectively in interfering with the liberty of action of any of their numbers is self-protection. The only purpose for which power can be rightfully exercised among members of a civilized community against his will is to prevent harm to others. His own good, either physical or moral, is not a sufficient warrant. He cannot rightfully be compelled to do or forbear because it will be better for him to do so; because it will make him any happier; because in the opinions of others to do so would be wise or even right. . . . In the part which merely concerns the individual, his independence is of right absolute. Over himself, over his own body and mind, the individual is sovereign. . . . Secondly, the principle requires liberty of tastes and pursuits, of framing the plan of our life to suit our own character; of doing as we like subject to such consequences as may follow without impediment from our fellow creatures, so long as what we do does not harm them even though they should think our conduct foolish, perverse, or wrong. . . . The acts of an individual may be hurtful to others or wanting in due consideration of their welfare without going the length of violating any of their constituted rights. The offender may then be justly punished by opinion though not by law. . . . But there is no room for discussion when a person's conduct affects the interests of no person beside himself or need not affect them unless they like, all the persons concerned being of full age, and the ordinary amount of understanding. In all such cases there should be perfect freedom, legal and social, to do the act and stand the consequences."

On this point, Blackstone says:[9] "By the absolute rights of individuals, we mean those which are so in their strictest and primary sense; such as would belong to their persons merely in a state of nature and which every man is entitled to enjoy whether out of society or in it. But with regard to the absolute duties which man is bound to perform considered as a mere individual, it is not to be expected that any human municipal law should at all explain or enforce.

"In former times sumptuary laws were sometimes passed, and they were even deemed essential in republics to restrain the luxury so fatal to that species of government. But the ideas which suggested such laws are now exploded utterly, and no one would seriously attempt to justify them in the present age. The right of every man to do what he will with his own . . . is accepted among the fundamentals of our law."[9]

The maxim *Salus populi suprema lex*, according to Judge Barker[10] amounts to this: "Man in his natural state has a right to do whatever he chooses and has the power to do. When

1. Jordan, David Starr, Address before Leland Stanford Junior Medical School, Lane Hall, Feb. 7, 1913.
2. Director Department of Research, New Jersey Training School for the Feeble-Minded.
3. Vasectomy, Legislative Reference Bureau, Rhode Island State Library.
4. Editorial, Springfield, Mass., *Republican*, Sept. 28, 1912.
5. Editorial, Pottsville, Pa., *Chronicle*, Feb. 3, 1913.
6. Editorial, San Antonio, Tex., *Light*, Feb. 1, 1913.
7. Mill: John Stuart: Essay on Liberty, pp. 22 et seq.
8. Blackstone: Commentaries, Book I, 123.
9. Cooley: Constitutional Limitations, pp. 549-550.
10. Commonwealth v. Campbell, 133 Ky. 50; 117 S. W., 383; 24 L. R. A., 172, N. S.

he becomes a member of organized society, under governmental regulation, he surrenders, of necessity, all of his natural right, the exercise of which is, or may be, injurious to his fellow citizens. This is the price he pays for governmental protection; but it is not within the competency of a free government to invade the sanctity of the absolute rights of the citizen any further than the direct protection of society requires."

Thus the legislature of a state can regulate the matrimonial contracts of its own citizens, and may declare what persons may marry.[11] The qualifications in most general use are mental capacity, physical capacity, consanguinity or affinity, race or color and previous marriage; in a few states[12] health of a certain standard has recently been included.

While it is generally recognized that a state can prescribe conditions under which persons may marry, the cases,[13] nevertheless, seem without an exception to assert that such conditions must be "reasonable." The power of a state cannot be so exercised as to infringe arbitrarily or "unreasonably" on personal rights; the public good must be the objective in any such legislation; that is, the act must be for the prevention of some offense or manifest evil, or the preservation of the public health, safety, morals or general welfare. There must be a clear, real and substantial connection between the assumed purpose of the enactment and its actual provisions. The act must in some plain, appreciable and appropriate manner tend toward the accomplishment of the object for which the power is exercised. The sovereign power of a state cannot be used as a cloak for the invasion of personal rights.[14]

While the authorities carefully tell us that the conditions prescribed must be "reasonable," they are not so explicit in defining this term. Consequently we have some difficulty in determining as to the "reasonableness" of a statute requiring the filing of an affidavit certifying to a certain degree of fitness, as a prerequisite to the issuance of a license to marry.

Judge Marshall says[15] that what constitutes reasonableness "must necessarily be determined with reference to the exigencies of the particular situation. There is no certain test by which what is reasonable in any given case can be definitely measured. It is a matter resting in human judgment. It is said that an attempt to give a specific meaning to the word 'reasonable' is trying to count what is not number and measure what is not space. Reasonableness is not synonymous with expediency. Matters of that sort are wholly for legislative cognizance. As applied to means to a legitimate end, 'reasonable' suggests not necessarily the best or the only method, but one fairly appropriate at least under all the circumstances. In the ultimate, the scope of the term, as regards any situation, must be measured with regard to the fundamental principles of human liberty as they were understood at the time of the formation of the Constitution and were intended to be impregnably intrenched thereby, adapting the same course to our modern conditions. Those principles have not changed in the years that have elapsed since the Constitution was formed. They are unchangeable and are of no less, but rather of greater importance than they were when the framers of the Constitution attempted so carefully to guard them. 'Reasonable' as applied to a law is manifestly not what extremists on the one side or the other would deem, in the light of the principles referred to and the situation to be dealt with, fit or fair. It is what from 'the calm sea level,' so to speak, of common sense applied to the whole situation, is not illegitimate in view of the end to be attained. In determining that the court must look to the language of the statute and to all the facts bearing on the situation of which it may properly be said to know judicially because of their common nature, or otherwise. Common sense as to 'reasonable' requirements should prevail, not the extreme views of well-meaning persons as to what is best.

"Idealists will often find efforts to force their standard of living on people generally by legislation barred by constitutional limitations. An eminent author aptly said, 'There is a wide interval between the ideal and the practical.' If what is here said were not so, individual rights as to persons and property would be only such as sovereign power acting through the legislature might see fit to recognize. The inalienable rights commonly supposed to be sacred and inviolable would be changed into mere uncertain privileges, and regulation, so called, might easily become destructive of that which we have been wont to believe was essential to life, liberty and the pursuit of happiness.

"Again, we give to the individual the utmost possible amount of personal liberty; and with that guaranteed him, he is treated as a person of responsible judgment, not as a child in his nonage, and is left free to work out his own destiny. . . . The legislature should not indulge the temptation to infringe on the rights of citizens with experimental laws none the less dangerous because well meant."

But "liberty," says Justice Harlan[16] "the greatest of all rights, is not unrestricted license to act according to one's own will. It is only freedom from restraint under conditions essential to the equal enjoyment of the same right by others. Society based on the rule that each one is a law unto himself would soon be confronted with disorder and anarchy."

According to Justice Carter,[17] "the police power of a state is that inherent plenary power which permits it to prohibit all things hurtful to the comfort, welfare and safety of society." It is coextensive with self protection and is not inaptly termed the "law of overruling necessity."[18]

Attempts may be made to sustain such a clause on the same grounds that the courts have employed in upholding laws regulating intermarriage between the races.[19] It is submitted, as contradistinguished from this, that there is a distinct line of demarcation between forbidding miscegenation and a clause requiring all persons who desire to marry to submit themselves to a physical examination in order to preclude the evolution of hereditary defects, especially when it has not been proved "beyond a reasonable doubt" or even by a "clear preponderance of the evidence" that such a law would inhibit the natural instincts to such an extent as to abrogate the undesirables.

Again, supposing that the bills are so drafted that the clause in question is omitted, and that the statute ultimately enacted is based rather on the model of the Connecticut[20] and Washington[21] statutes, which go the length of forbidding the intermarriage of insane persons, epileptics and the like. It may then be argued that Gould *v.* Gould[22] conclusively decides the validity of such legislation. In reply it may be said that this opinion is "obiter dictum,"[23] since it was not necessary to pass on the constitutionality of the law in order to decide the case. Consequently, as Judge Hamersley[24] holds in his dissenting opinion, the question is still open, and the court might very well hold to the contrary, especially when the language of the statute is considered. This refers to "insane persons and feebleminded persons, epileptics, etc.," which would seem rather uncertain wording to carry with it the extreme penalty which it does. Even in the opinion of the majority of the court there seems some little doubt, "to impose such a restriction on the right to contract marriage, if not intrinsically 'unreasonable,' is no invasion of the equality of all men before the law, if it applies equally to all, under the same circumstance, who belong to a certain class, etc." By this it can be seen that each statute will have to be considered alone, and it will stand or fall in just that extent with which it complies with the rule of 'reason.'"

11. 26 Cyc. 828, 842, and cases thereunder.
12. Ohio, Washington, and others.
13. Note, 2 L. R. A. 531, N. S. and cases.
14. 22 A. & E. Encyc. of L. 938 and cases; 8 Cyc. 864 and cases.
15 Bornett v. Valulier, 136 Wis. 193; 116 N. W. 885; 17 L. R. A. 456, N. S.
16. Jacobson v. Massachusetts, 197 U. S. 11.
17. City of Belleville v. Turnpike Co., 234 Ill. 428; 84 N. E. 1049.
18. McLean v. Arkansas, 211 U. S. 539; Ex Parte Quarg, 149 Cal. 79; 84 Pac. 766; 5 L. R. A. 183, N. S.
19. Civil Rights, 7 cyc. 173; 34 Cent. Dig. Paragraph 26 Marriage; 8 cyc. 1074, Constit. L.; 10 Cent. Dig. Paragraph 716, Constit. L.
20. Com. Pub. Acts 1895, Ch. 325, p. 667.
21. Wash. Sess. L. 1909, Ch. 16.
22. 78 Conn. 242; 61 Atl. 604; 2 L. R. A. 531, U. S.
23. That is, the court in making the point has digressed from the true issue in the case. Therefore such a statement is to be given weight only in proportion to the legal acumen of the judge writing the opinion.
24. Gould v. Gould, 2 L. R. A. 544-545 U. S.

As regards the possibility of enforcing such a requirement as that of the physician's certificate, the Commissioner of Health for Washington has recently said that the legislature of that state inserted such a clause in the bill as it was first enacted. The immediate result was that all the couples desiring to be married went to British Columbia, Oregon and Idaho. Consequently, on a special session of the legislature being called, the clause was repealed. The Commissioner aptly expresses the situation by saying that "it was a good law, but it didn't work."

The defect in the Washington statute might to a certain extent be corrected by inserting a provision forbidding citizens of any particular state who fall within the classes named to marry either within the state or without; for if marriage be subject to regulation at all, such a clause would be entirely within the sovereign power of the state.[25] But even such a provision would not entirely obviate the evil, for with our ever-shifting population it is an easy matter to acquire a "residence" in another state so as to become a "citizen" thereof, and thus come within the exception of the proposed Idaho law, for example. Then again it is not necessary even to leave the state to escape the end of the certificate. It would be quite simple to induce a physician to certify to the possession of perfect health without fear of detection or at least conviction, for the "falsely certifying" would have to be done "knowingly." With the technicalities which exist to-day, to say nothing of the loopholes afforded by the expert witness and the like, what chance would there be for a conviction? The court in Gould *v.* Gould says that the case before them was the first in which the law was ever in question, which would seem to import that the statute had been practically lying dormant since the time of its passage, for the parties to the case had married despite the law, and the wife having learned of the existence of the statute was attempting to secure either an annulment of the contract or a decree of divorce. Could not this very well happen with any statute passed in any state?

The Washington statute designates certain classes who may not marry, forbids clergymen and other officers to knowingly perform a marriage ceremony, requires all persons desiring to marry to file an affidavit as to their health and the like with the county auditor, requires the consent of parents in the case of minors and provides a penalty for the violation of the law.

Connecticut and Minnesota have laws forbidding the intermarriage of persons who fall within certain classes, but the laws of neither state include persons afflicted with pulmonary tuberculosis and venereal diseases. Michigan, Delaware, New Jersey, North Dakota, Ohio and Kansas, among other states, have legislated along apparently similar lines. None of these laws has proved satisfactory or effective, and does not furnish the remedy for the evil.

During the present session of the legislatures and assemblies in the various states, numerous bills which in some way tend to the regulation of marriage have been either introduced or proposed for introduction.

The Idaho bill, consisting of thirty-six sections, repeals all previous legislation on the subject in that state. It defines marriage; states who may be parties thereto; designates certain conditions precedent which must be performed prior to the consummation thereof; names the grounds for divorce, and provides certain penalties for any violations of its mandates. For present purposes, however, only a portion of this well-considered measure is of immediate interest. This is the part which deals directly with the subject of eugenics.

Section 7 of the Idaho bill forbids the intermarriage of persons afflicted with insanity, feeble-mindedness, imbecility, epilepsy, syphilis, gonorrhea or with contagious venereal diseases; and also those who are common drunkards or addicted to habit-forming drugs, in Section 7 naming "opium, cocain or morphin," and in Section 12, Subdivisions 5 and 6, adding to this list "or other narcotic drug." The language as used in Section 7 is, "The following marriages are absolutely prohibited." Women over 45 are excepted under Section 7.

If, notwithstanding the above, a person should fraudulently conceal the facts and thereby induce another to enter into a contract of marriage, Section 9 then provides that the party so laboring under a disability shall be precluded from recovering any damages for failure on the part of the second party to complete the contract; and again, if the marriage be actually consummated, then, under Section 5, the party imposed on may avoid the contract in a suit for divorce.

Sections 11 and 17 to 25 prescribe the conditions to which all parties desiring to have the marriage status created must conform. By these sections the parties must be examined as to their physical and mental condition by a duly licensed practitioner, and a certificate as to their condition must be filed with the county recorder together with their application for a license. The parties must submit themselves to an examination on oath by the county recorder or the person who is solemnizing the marriage as to their names, age, health, etc., if such officials see fit. After a notice of the application has been published for fifteen days, and if the conditions are all fulfilled, the license will be issued and the marriage may be solemnized.

By Sections 15 and 30 to 34 certain penalties are provided for violations of the statute either by the parties themselves or by the ones who are to administer the various provisions of the act. A physician under Section 15 is denied the right to practice *ipso facto*, on a second conviction for certifying falsely to a person's health, but the "mens rea"[26] must be proved. The issuance of a license, the solemnization of a marriage and the making of false returns are constituted misdemeanors for which the accused on a conviction shall be fined in amounts varying from $50 to $200 and imprisonment of at least three months, in accordance with the offense. Finally, any person swearing falsely to any material fact shall be guilty of perjury, and on a conviction shall be punished in pursuance with the law.

California, in a proposed bill, has included a unique measure in permitting the intermarriage of persons within the usually prohibited classes, providing such persons will "submit to asexualization or are from any cause sterile."

Senate Bill 45 for the state of North Dakota proposes to change the law in that state by following more nearly that of the state of Washington.

Senate Bill 3 of Utah forbids indigent persons to intermarry, "unless it satisfactorily appears that the cause of such condition has been removed and that such male applicant is able to support a family and likely to so continue."

Among other states in which similar measures were introduced are Wisconsin, Colorado, Oklahoma, Indiana, Pennsylvania, Michigan, Ohio and Nebraska.

In conclusion, it may be said that any bill drafted with the intent of crystallizing the present theories of eugenics into law, must conform to the "rule of reason," as laid down by Judge Marshall in the Wisconsin decision quoted above. This is, that any restrictions on the acts of citizens must be "reasonable" restrictions. Unless this point is kept in mind in drafting bills on this subject, and if any extreme or unusual restrictions are incorporated in the bill, there is danger that the courts may declare the whole law unconstitutional on account of the "unreasonableness" of some provision, such as that requiring a physical examination as a prerequisite for a marriage license.

The idea of such a statute should be rather as a guide and for instructive purposes than to designate any definite method of procedure. Inculcating the principle of John Stuart Mill, it could be forbidden that certain classes intermarry and then leave it with each individual as to whether or not he dare tamper with the health and welfare of the coming generations, or himself sustain a possible injury through an unwise act. This would be tantamount to embodying the thought to which the women's clubs desire to give expression, and would meet the possible objections of those individualists who are ever fearful of a too extensive development of the paternalistic theory.

25. See Section 10 H. B. 44, Idaho.

26. "Guilty mind," or "intent" to commit the act charged.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

DELAWARE: State Society and Homeopathic, Dover and Wilmington, June 17-19. Secretary of the Medical Council, Dr. Henry W. Briggs, 1026 Jackson St., Wilmington.

IOWA: Capitol Building, Des Moines, June 2-4; State University, Iowa City, June 5-7. Sec., Dr. Guilford H. Sumner, State House, Des Moines.

KANSAS: Topeka, June 10. Sec., Dr. H. A. Dykes, Lebanon.

KENTUCKY: Armory, Louisville, June 3-5. Sec., Dr. J. N. McCormack, Bowling Green.

LOUISIANA: New Orleans, June 5-7. Sec., Dr. A. B. Brown, 108 Baronne St., P. O. Box 1060.

MARYLAND: Regular, 1211 Cathedral St., Baltimore, June 17. Sec., Dr. J. McP. Scott, Hagerstown; Homeopathic, Baltimore, June 13-14. Sec., Dr. O. N. Duvall, 1817 N. Fulton Ave.

MICHIGAN: Ann Arbor, June 10-12. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

MICHIGAN: Y. M. C. A. Bldg., Detroit, May 22-24. Sec., Dr. B. D. Harison, 504 Washington Arcade.

MINNESOTA: Pathological Laboratory State University, Minneapolis, June 3. Sec., Dr. Thomas McDavitt, Lowry Bldg., St. Paul.

MISSISSIPPI: Capitol Bldg., Jackson, June 3-4. Sec., Dr. E. H. Galloway.

NEBRASKA: Lincoln, May 28-29. Sec., Dr. C. P. Fall, Beatrice.

NEW JERSEY: Capitol Bldg., Trenton, June 17-18. Sec., Dr. H. G. Norton, 429 E. State St., Trenton.

NEW YORK: June 24-27. Chief of the Examinations Division, Harlan H. Horner, Department of Education, Albany.

NORTH CAROLINA: Morehead City, June 12. Sec., Dr. Benjamin K. Hays, Oxford.

OHIO: Columbus, June 2-5. Sec., Dr. George H. Matson, State House.

SOUTH CAROLINA: Columbia, June 10. Sec., Dr. A. Earle Boozer, 1806 Hampton St.

TEXAS: Austin, June 4-6. Sec., Dr. W. L. Crosthwait, Suite 1110 Amicable Bldg., Waco.

VIRGINIA: Richmond, June 24-27. Sec., Dr. Herbert Old, Norfolk.

WYOMING: State House, Cheyenne, June 25-27. Sec., Dr. J. B. Tyrrell, Laramie.

An Attempt to Organize Inferior Medical Colleges

An effort is apparently being made to induce acceptable colleges to join an organization having a high-sounding name but having as its chief object the perpetuation of discredited medical colleges and avowedly to oppose the Council on Medical Education in its efforts to secure reasonably high standards of medical education. A brief statement showing the incidents leading up to this organization will be interesting.

In March, 1912, an inspection was made of the Maryland Medical College by representatives of the Council on Medical Education, the United States Bureau of Education, Washington, D. C., and the Maryland State Board of Medical Examiners. Among other bad conditions it was found that students had been admitted without adequate preliminary training, and that others had been given advanced standing who had failed miserably at other medical schools. As a result of this inspection the college was rated in Class C by the Council on Medical Education and action was taken by the Maryland State Board of Medical Examiners withdrawing recognition from the school.

In January, 1913, the following letter was sent to a large number of medical colleges, particularly to those of Class C:

Maryland Medical College
Fayette and Calhoun Sts.

Baltimore, Md., January 31, 1913.

Dear Doctor:—

The American Medical Association seems to have determined that all unendowed medical colleges must close, and failing that, the Association is attempting to have State Laws passed, or to effect changes in existing laws, so that the requirements of the various State Boards will be such that it will be impossible for us to meet them.

We feel that something should be done for mutual protection, and are writing for an expression of opinion as to the advisability of effecting an organization for that purpose.

This matter requires immediate attention, and you will greatly facilitate matters by an early reply. Respectfully yours,

Committee { B. P. MUSE, M.D.
PEARCE KINTZING, M.D.

A meeting was later called to be held in Chicago, Feb. 24, 1913. The following is a copy of an anonymous circular letter dated Feb. 18, 1913:

Albany, New York, Feb. 18, 1913.

WAKE UP!

Your Medical School along with many others is slated for annihilation by the A. M. A.—Colwell—Bevan—Simmons. In the State of New York alone only five schools are to be left.

In Wisconsin a school of 250 students was recently totally destroyed in less than a week by the above conspirators. When done there are to be left but 50 Medical Schools to be controlled by those who have undertaken to destroy the others.

In less than a year the plans for the acomplishment of this will be completed. Do you not think it is time to organize for your own protection?

A call has been made for all A. M. A. class B & C Schools to assemble at the Congress Hotel in Chicago on February 24th and discuss ways and means for the exposure of the unjust methods employed by the few A. M. A. Medical autocrats.

Will you send a delegation to this meeting? The enemy is organized and so will we be after this convention.

Yours very truly, Committee of Ten.

Feb. 21, 1913, this was followed up by the following night letter:

Expect large and enthusiastic meeting of medical colleges at Congress Hotel (not Auditorium) Chicago February 24th twelve o'clock noon. Send delegation.

B. P. MUSE.
PEARCE KINTZING.

The meeting was announced in the lobby of the Congress Hotel, Feb. 24, 1913, as follows:

Muse Medical College Committee Meeting,
Club Room 6, 12 M. and 8 P. M.

The following correspondence carried on recently is interesting in connection with the preceding:

Bennett Medical College
1358-1362 Fulton Street
Chicago, April 13, 1913.

John Dill Robertson, M.D.
President Board of Trustees.
Dr. James R. Day, Chancellor, —
Syracuse University,
Syracuse, N. Y.

My Dear Chancellor:—

At the suggestion of Dr. ———, Dean of the ——— Medical College of ——— I am writing you to determine at what date Dr. ———, Dr. ———, and myself can visit you in Syracuse in regards to an association known as the American Association of Medical College Faculties which was determined upon at a recent meeting of about twenty five medical colleges in the United States. Representatives of these colleges met in Chicago in February and decided upon this organization, the object of which is to make a closer union between the teaching bodies of the various institutions, to study different methods of pedagogy in medical schools, and to *combat the unfair treatment given to many of the medical schools in the United States by the Council of the American Medical Association.* [Italics ours.—ED.]

This organization is made up of schools of classes A, B, C, of the A. M. A. classification. We desire to confer with you looking toward securing your active support in this organization, and if you think it will be worth while for us to call upon you in Syracuse along the lines above mentioned we would be pleased to make the trip. If, on the other hand, for any reason it will be impossible for you to join with us in this organization I would thank you for a candid statement to that effect.

Hoping to hear from you at the earliest possible moment, I beg to remain. Very truly yours,

JOHN DILL ROBERTSON.

The following "candid statement" was sent:

The College of Medicine of Syracuse University
307-311 Orange St.
Syracuse, New York, April 16, 1913.

Dr. John Dill Robertson
Bennett Medical College
Chicago, Ill.

My Dear Doctor:—

Chancellor Day has referred your letter concerning the proposed American Association of Medical College Faculties to me.

This school has been interested only in pushing forward to the utmost the science of medical education. The position which we have earned in the opinion of medical educators is entirely due to the unselfish devotion of the faculty to these ideals of medical education. We have felt that the education departments of the states and of the nation have lagged behind rather than advanced too rapidly. We have, therefore, no interest in the proposition "to combat the unfair treatment given to many of the medical schools in the United States by the Council of the American Medical Association." Very truly yours,

JOHN L. HEFFRON,
Dean.

It may be interesting at a later date to publish the membership in this association.

District of Columbia January Report

Dr. George C. Ober, secretary of the Board of Medical Supervisors, reports the written and oral examination held at Washington, Jan. 14-16, 1913. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 16, of whom 15 passed and one withdrew. The following colleges were represented:

PASSED			
College	Year Grad.		Per Cent.
George Washington University	(1912)	83.4, 86.9, 89.7, 90.6,	90.6
Georgetown University	(1911)	81.9; (1912)	91.2
Howard University	(1911)	86.8; (1912) 82.4,	88.2
Bennett Medical College	(1913)		77.3
Boston University	(1892)		76.1
Long Island College Hospital	(1912)		93.1
Medico-Chirurgical College of Philadelphia	(1908)		86.2
University of Virginia	(1908)		75.3

Idaho April Report

Dr. O. J. Allen, secretary of the Idaho State Board of Medical Examiners, reports the written examination held at Boise, April 1-2, 1913. The number of subjects examined in was 11; total number of questions asked, 110; percentage required to pass, 75. The total number of candidates examined was 8, all of whom passed. The following colleges were represented:

PASSED			
College	Year Grad.		Per Cent.
College of Physicians and Surgeons, Baltimore	(1909)		83
St. Louis College of Physicians and Surgeons	(1906)		81
St. Louis University	(1913)		79
Washington University, St. Louis	(1907)		82
Central Medical College, St. Joseph	(1900)		80
Creighton Medical College	(1912)	83,	85
Medical College of Ohio	(1901)		85

Minnesota April Report

Dr. Thomas S. McDavitt, secretary of the Minnesota State Board of Medical Examiners, reports the written examination held at Minneapolis, April 1-4, 1913. The number of subjects examined in was 18; total number of questions asked, 110; percentage required to pass, 75. The total number of candidates examined was 8, of whom 5 passed and 3 failed. Nine candidates were licensed through reciprocity. The following colleges were represented:

PASSED			
College	Year Grad.		Per Cent.
College of Physicians and Surgeons, Chicago	(1912)		86
University of Minnesota, Medical School	(1912)	84,	88
Queens University, Kingston, Ontario	(1911)		77
Royal College of Surgeons, England	(1908)		87
FAILED			
Marquette University	(1909)		73
Laval University, Quebec	(1912)		70
University of Paris, France	(1894)		72

LICENSED THROUGH RECIPROCITY		
College	Year Grad.	Reciprocity with
Northwestern University Medical School	(1908) (1911)	Illinois
College of Physicians and Surgeons, Chicago	(1912.2)	Illinois
Rush Medical College	(1911) (1912)	Illinois
Hamline University	(1908)	Wisconsin
Miami Medical College	(1906)	Ohio
Western University, London, Ontario	(1899)	Nebraska

Book Notices

OPERATIVE OBSTETRICS, INCLUDING THE SURGERY OF THE NEW-BORN. By Edward P. Davis, A.M., M.D., Professor of Obstetrics, Jefferson Medical College, Philadelphia. Cloth. Price, $5.50 net. Pp. 483, with 264 illustrations. Philadelphia: W. B. Saunders Co., 1911.

The author aims to give a concise statement of present methods of operating. The material has been arranged with respect to pregnancy, labor and the puerperium, the three physiologic divisions in obstetrics, with a final division comprising the surgery of the new-born.

Preliminary to this are a few chapters on general subjects. The anatomy of the parturient tract in pregnancy, in labor and in the puerperium, and the condition of the birth-canal with respect to asepsis are first discussed. The prevention of obstetric hemorrhage and a consideration of the pregnant woman as a surgical patient, are next taken up. In the chapter devoted to anesthesia a preference is shown for ether. A compilation of results for the use of anesthesia by lumbar puncture makes against, rather than for, this method. The author directs attention particularly to the danger of general anesthesia in highly toxic patients and in those in acute anemia. The technic of obstetric operations as conducted in the hospital and in the private home concludes this portion of the work.

The chapters devoted to the surgery of pregnancy discuss such conditions as uterine displacements, tumors of the uterus, and pathologic development in the appendages. Conservative treatment is advised in fibromyomas, though the author advises prompt removal of a definite ovarian growth, no matter what the period of pregnancy may be. Since such good results are now obtained by cesarean section and pubiotomy, the induction of premature labor is not thought of so highly, and it should never be advised as the safest operation for the infant. Methods of rapid and forcible dilatation of the uterus are described, but in the unaltered cervix, as in the primipara before labor, the uterus should be opened by incision and never by dilatation. Operations on the appendix, the gall-bladder and the kidneys are briefly referred to. Ectopic gestation is discussed almost entirely from the technical point of view.

The greater portion of the volume is occupied by a consideration of the various operative procedures made necessary by complications of labor itself. Indications for the use of the forceps in extraction are not set forth so clearly as desirable in a text-book. The axis-traction instrument is well described, and after mentioning Pajot's maneuver and the use of tapes with ordinary forceps as substitutes for an axis-traction instrument, the author is careful to state that such appliances are unsatisfactory and to be used only in the absence of something better. Repeated expression throughout the volume is given to sound common sense and logic, demonstrating that the author's opinions and teachings are based on close observation during an extensive experience. In general the volume represents an essential part of obstetric literature presented in a brief and practical form. Illustrations are profuse, and excellently perform their part in illuminating the text. One of the most valuable features is the extensive bibliography immediately following the discussion of each subject. A carefully prepared index completes the volume.

AFFEKTSTÖRUNGEN. Studien über ihre Aetiologie und Therapie. Von Dr. Med. Ludwig Frank, Spezialarzt für Nerven- und Gemütskrankheiten in Zurich. Paper. Price, 16 marks. Pp. 399. Berlin: Julius Springer, 1913.

The author reports a series of fifty-six cases of the various neuroses and psychoneuroses under the all-embracing name "disturbances of the affects." Formerly a disciple of Freud, he has ceased to follow him, because the leader has adopted too swift a pace. In this work we see Freud half way: the mental catharsis under mild hypnosis is utilized to unearth and abreact the buried complexes, but nothing more is done. For the author there exist numerous unpleasant complexes—not necessarily of sexual origin—which have been repressed and dissociated from consciousness, but which he endeavors to synthesize with the conscious ego. He believes, as Freud formerly did, that the symptoms of the neuroses disappear after the parasitic complexes have been cast out from the subconscious. Satisfied with the results he obtains by the hypnotic method, he does not apply the so-called free associations of Freud, or Jung's word-association tests, except in rare instances. In addition he takes a decided stand against the great emphasis laid by the Freud school on the sexual element of everything pertaining to the psychoneuroses. In short, he is only mildly Freudian. The case histories are worth reading; also their interpretations. While the charm of sensationalism is absent in this monograph, it creates the more lasting impression of truth and conservatism.

CHLORID OF LIME IN SANITATION. By Albert H. Hooker, Technical Director, Hooker Electrochemical Company. Cloth. Price, $3. Pp. 231. New York: John Wiley & Sons, 1913.

The use of chlorinated lime (chlorid of lime) in the purification of water-supplies dates back hardly four years; yet the method has attained wide use for this purpose and for various other disinfecting purposes. This book has been prepared by the research department of the Hooker Electrochemical Company of Niagara Falls primarily, perhaps, for commercial reasons; but it represents an excellent summary of the knowledge concerning chlorinated lime and its use for the disinfecting of water-supplies, sewage and many other purposes. Among the valuable suggestions in the book for extending the use of chlorinated lime are those concerning street-sprinkling, the prevention of the breeding of flies in garbage, manure, etc., and various uses about the farm and in the dairy, as in the disinfecting of milk-cans and bottles. In addition, there are nearly 150 pages of abstracts and references to articles on water-pollution, sewage-disposal and a host of other allied subjects of public sanitation.

THE SOLDIER'S FOOT AND THE MILITARY SHOE. A Handbook for officers and Non-Commissioned Officers of the Line. By Edward Lyman Munson, A.M., M.D., Major, Medical Corps, United States Army. Cloth. Price, $1.35. Pp. 147, with 54 illustrations. Fort Leavenworth, Kan.: United States Cavalry Association, 1912.

Major Munson, who has been president of the Army Shoe Board for four years, gives the results of the studies and investigations of the board, including the critical study of the feet of about two thousand soldiers, and the fittings of many thousands of pairs of shoes. In the chapter on foot injuries and marching capacity, it is demonstrated that a large portion of injuries common to marching troops in number, extent and gravity are unnecessary, and are preventable by simple measures. The chapter on the anatomy and use of the foot is well within the grasp of the layman, and forms an excellent introduction to the study of the fitting of military shoes. The adoption and thorough application of the principles laid down in this work will materially increase the efficiency of the soldier, as the endurance of a marching man is dependent on his feet.

THE DEATHS OF THE KINGS OF ENGLAND. By James Rae, M.A., M.D. Cloth. Price, 4 shillings 6 pence. Pp. 152. London: Sherratt & Hughes, 1913.

This little book contains a brief account of the deaths of the sovereigns of England. In each case the author has gone to the original source for his information and has tried to reach a conclusion as to the nature of the disease that seems warranted by the facts. It is well known that some of the facts concerning the earlier rulers were indefinitely stated and that vague notions as to disease prevailed. A diagnosis, therefore, expressed in modern terms, is little more than a shrewd guess. Some of the author's deductions are, as he himself realizes, rather fanciful. His suggestion that Henry IV. died of a gumma of the bundle of His does not seem to us so far-fetched as that one of the visions seen by Elizabeth, the vision of a man in a flame, is most probably explained by xanthopsia from jaundice due to her starvation.

HOUSEHOLD BACTERIOLOGY. For Students in Domestic Science. By Estelle D. Buchanan, M.S., and Robert Earle Buchanan, Ph.D., Professor of Bacteriology, Iowa State College. Cloth. Price, $2.25 net. Pp. 536, with 300 illustrations. New York: The Macmillan Company, 1913.

Bacteriology, in its relation to domestic science, should prove of interest to this class of students, especially in view of the fact that the yeasts and molds are discussed more fully than is customary in most texts. The book is divided into five sections: (1) "Morphology and Classification;" (2) "Cultivation and Observation of Micro-Organisms;" (3) "Physiology;" (4) "Fermentations;" (5) "Relationship of Micro-Organisms to Health." The last division, embracing nearly half the book, deals with the preparation and preservation of foods, household sanitation and personal hygiene, thus emphasizing rather forcibly that phase of bacteriology.

Medicolegal

Duties and Compensation of Health Officers—Substitutes Not Allowed

(Hickman County vs. McMorris (Ky.), 147 S. W. R. 768)

The Court of Appeals of Kentucky reverses a judgment sustaining an allowance of a claim presented by Dr. McMorris. The court says that the services were rendered during the latter part of the year 1910, and during the early part of the year 1911, when Dr. McMorris, acting by order of the county board of health, established a number of quarantines, and fumigated the premises of certain persons afflicted with scarlet fever and small-pox, which had become epidemic in the community. The circuit court found the facts substantially to be that the county board of health, regularly organized, had, up to February, 1911, elected a Dr. Scarborough secretary of the board at an annual salary of $50 per annum, and that Dr. Scarborough refused to perform the duties of that office for that salary. The board then directed Dr. McMorris to perform the services charged for, which he did, and his charges were reasonable and just. From this statement of fact the circuit court concluded that the law authorized the board of health to employ another than the county health officer to perform those duties in cases of emergency when the duly elected secretary failed to perform them. The Court of Appeals agrees with the circuit court that the evidence was sufficient to show that the particular services for which an allowance was claimed were authorized by the county board. It also concludes that services rendered in fumigating premises of those afflicted with contagious diseases and establishing necessary quarantines, even though the persons afflicted with the disease were solvent, were services for which the county was liable, as such measures are not taken for the individual benefit of the particular patient, but to prevent the spread of the disease, and are therefore for the benefit of the public generally.

May the county board of health, while there is a regularly appointed health officer in office, who refuses to perform the duties of the office, impose the performance of his duties on another physician, and make the county liable for the payment of the latter's services? Manifestly not. When Dr. Scarborough resigned as health officer on the ground that he was unwilling to perform the duties of that office for the compensation fixed by the fiscal court, the county board of health should have accepted his resignation. It had no right to let him continue in office and delegate his duties to another; nor did Dr. Scarborough have the right to hold the office, and at the same time refuse to perform the duties thereof. Even if he had not resigned, it was the duty of the county board of health to remove him and appoint another in his place, who would perform the duties of the office. The statute plainly provides that the fiscal court shall fix the salary of the health officer at the time of or immediately after his election, and that in no state of case shall such health officer claim or receive from the county any compensation for his services other than the salary fixed by the fiscal court. This provision of the statute cannot be evaded by letting the health officer remain in office without performing the duties of the office, and then delegating to another the performance of those duties and allowing him compensation therefor.

But it was claimed that, under this view of the law, the fiscal court may fix the salary of the health officer so low that no one will perfom the duties of the office, and thus defeat the very purpose for which the county boards of health are established. This court has held, however, that the salary fixed for the health officer must be reasonable, and that from an order of the fiscal court fixing the salary an appeal lies to the circuit court and thence to this court. Under these circumstances, the court thinks there will be no difficulty in securing the services of a competent health officer, even though the fiscal court should make the salary unreasonably low, for, on making this fact appear, the necessary relief will be afforded either in the circuit court or this court. If it be argued that, owing to the uncertainty as to the amount of

salary the health officer is to receive, no one will undertake the duties of the office, it is a sufficient answer to say that the members of the fiscal court are charged with the duty of fixing a reasonable compensation for the health officer, and no doubt the fact that for a failure in this respect, resulting in an epidemic in the community, they will be answerable to their constituents, who will not continue in office men who are so unmindful of the health and welfare of the people, will be a sufficient reason why they should act justly and properly, aside from the fact that their action will be reviewed by a higher court.

As $213 of the amount of Dr. McMorris' claim was for services rendered while Dr. Scarborough was the health officer, it followed that he was not entitled to recover that sum. Nor was he entitled to recover the remainder of $69 for services performed after his appointment as health officer, as his claim for the latter sum will be included in whatever salary the fiscal court may have fixed for his services. If no salary has heretofore been fixed, the fiscal court will fix the salary at a reasonable sum.

Pulmonary Consumption Not Ground for Divorce

(Abramowitz vs. Abramowitz (N. Y.), 140 N. Y. Supp. 275)

A special term of the Supreme Court of New York, King's County, denies, with costs, a motion for alimony and counsel fee in the plaintiff wife's action for separation on the ground of cruelty and conduct rendering it unsafe for her to cohabit with the defendant. The court says that the parties intermarried on May 5, 1912, and the wife returned to her parents after five days. She based her charge solely on the fact that the defendant's state of health was such that it was "impossible, unsafe, and unhealthy for her to cohabit with him." She said that he was troubled with a violent cough at night accompanied by expectoration of blood, and that the physician called in attendance stated that it "was caused by hemorrhages," but the affidavit of the physician who made so discriminating a diagnosis was not furnished for the enlightenment of the court. Unless the plaintiff produced on this motion sufficient evidence to afford a reasonable ground for the belief that she could eventually succeed in her action, she was not entitled to alimony pending litigation or for expenses. Would the facts stated in the complaint, therefore, if true, warrant the inference of legal cruelty, under subdivision 1, or unsafe conduct under subdivision 2 of section 1762 of the New York Code of Civil Procedure?

Whatever may be the rule in other jurisdictions, the court is unaware of any authority in New York state which holds that disease of the character mentioned is sufficient cause for separation from bed and board. Assuming for the sake of the argument that the facts so insufficiently and inartificially pleaded pointed to the existence in the defendant of the disease commonly known as pulmonary consumption, which is very generally held to be both communicable and dangerous to health, its existence prior to the time of the marriage was not claimed, nor that any false representations as to the defendant's state of health were made so as to induce the plaintiff to wed, though, of course, had there been, it would not be available in the present form of action. The plaintiff apparently had as ample opportunity for making inquiries as to the health of the defendant before marriage as she had as to his earning capacity. Perhaps the exercise of as great caution regarding the former as was paid to the latter consideration would have saved both parties trouble and unhappiness.

So far as the court has had time to investigate the law in New York state, there is only one form of disease which the courts have thus far recognized as sufficient for a decree of separation on the ground of legal cruelty, and this only when that particular disease is knowingly or wilfully communicated. Anonymous, 17 Abb. N. C. 231. And, if disease of other sorts be not regarded as ground for separation under subdivision 1 of section 1762, no more does it constitute "such conduct on the part of the defendant to the plaintiff as may render it unsafe and improper for the former to cohabit with the latter," under subdivision 2. Conduct as here employed refers to a course of dealing on the husband's part, a continued purpose evidenced by action, and it implies intentional and wilful acts, not merely those which are involuntary or unintentional, or from the effects of which he himself cannot escape. If during marriage disease attacks one of the spouses, it is not the one so afflicted who is guilty of legal cruelty. It is rather the other one who seeks on that ground a judicial separation.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, MINNEAPOLIS, JUNE 17-20

American Academy of Medicine, Minneapolis, June 13-15.
Amer. Medico-Psychological Assn., Niagara Falls, Can., June 10-13
American Proctologic Society, Minneapolis, June 16-17.
Arizona Medical Association, Globe, May 20.
Arkansas Medical Society, Little Rock, May 20-23.
Connecticut State Medical Society, Hartford, May 21-22.
Illinois State Medical Society, Peoria, May 20-22.
Maine Medical Association, Portland, June 25-26.
Massachusetts Medical Society, Boston, June 10-11.
New Jersey Medical Society, Spring Lake, June 10-12.
North Carolina State Medical Society, Morehead City, June 17
Rhode Island Medical Society, Providence, June 5.
South Dakota State Medical Association, Vermillion, May 27-29.
West Virginia State Medical Association, Charleston, May 21-23

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS

Ninth Triennial Session, held at Washington, D. C., May 6-7, 1913

The President, DR. WILLIAM C. GORGAS, Ancon, C. Z., in the Chair

THE STUDY OF RENAL FUNCTION

Its Clinical Importance

DR. HENRY A. CHRISTIAN, Boston: Renal function is of interest to physician and surgeon alike, since organic and pathologic changes make it important to know how the kidneys are functioning concomitantly and singly in order that the proper remedial measures may be applied and to determine the advisability of surgical intervention. In the diagnosis of pathologic lesions of the kidney, functional tests may be expected to yield information on two points: 1. Are the kidneys diseased? 2. What type of pathologic lesion do they show? A review of the methods of testing renal function by measuring the excretion of salts, water, lactose, potassium iodid and phenolsulphonephthalein, by measuring the retention of non-protein nitrogen in the blood, by the determination of diastase in the urine, by determining indican in the blood or by estimating urinary acidity, shows that great aid has been given clinically in determining whether or not the kidneys are diseased, but that distinctly less help has come in answering the second question as to what type of lesion the kidney shows. As in all forms of clinical diagnosis, diagnosis must be based on the data not on a single test but of many. In this sense functional tests have yielded new data, and a discriminating evaluation of these new data, along with a consideration of data furnished by other methods of examining patients already long in use, justifies us in making an estimate of renal condition with increased certainty. We can expect fewer failures in such diagnosis than before we had these functional tests, but so long as increased study fails to yield a demonstrable anatomic change to correspond with all observed functional variations, so long shall we remain unable to make anatomic diagnoses which in most cases will prove to be correct when the pathologist examines the kidney.

Prognostic Value

DR. L. G. ROWNTREE, Baltimore: All the tests for determining renal function proved of value. Functional studies reveal only the excretory capacity of the kidney, but do not

make the diagnosis or settle the prognosis. They should be used as a matter of routine in conjunction with other procedures. When the phthalein test reveals decreased renal capacity, one of the blood tests, urea, rest, nitrogen or cryoscopy should be employed to determine the presence or absence of cumulative phenomena. Dye substances other than phthalein need not be employed prognostically since they yield less quantitative and less reliable results and add nothing to prognosis. The phthalein test is the one for general use under all conditions. Its findings can be verified and its indications strengthened by the employment of selected tests in different conditions. The iodid and salicylate tests are not of great prognostic value. Lactose is unreliable, since its total suppression occurs in moderate lesions of a given type, but suppression in chronic nephritis indicates a severe lesion. The urea is of value only in relation to unilateral renal disease. Phloridzin has a tendency to exaggerate the degree of functional injury, and hence it is not of great value. Salt in a marked tubular hyposthenuria carries much prognostic significance; otherwise the chlorids are of only slight prognostic value. If, with the water test, a very marked oliguria or anuria persists, it is of significance. Diastase may be depressed tremendously in moderate degrees of renal injury, while at other times it is not affected proportionately to the injury, and hence it is not reliable for total capacity. In unilateral cases the diseased kidney is correctly indicated. The value of total coagulable nitrogen and of urea in the blood has been enhanced by the introduction of newer and more accurate methods by Folin and Marshall. These tests can be used interchangeably and have about the same value. Increased concentration of these substances does not always occur in severe renal involvement, and therefore their normal concentration in the blood does not indicate normal kidneys. Their increase signifies renal injury, and the extent of the increase is of extreme value in determining the extent of the injury. They are not of value in determining the diseased kidney when only one is involved. Cryoscopy occupies a similar position with about the same significance. A study of the combinations of these tests is needed in order to determine the extent of parallelism in their findings. With cholesteremia we have had no experience.

Its Bearing on Treatment

Dr. Theodore C. Janeway, New York: From a broad point of view, the phenolsulphonephthalein test, and the less satisfactory ones which it has replaced, has greatly contributed to the effectiveness of the treatment. The internal treatment of renal disease has made definite progress along two lines: 1. The study of experimental nephritis in animals has made clear the existence of isolated disturbances in the excretion of individual constituents of the urine, and the existence of definite types of abnormal reactions of the diseased kidney to stimuli. These have been found to have their counterparts in human nephritis. 2. The accurate study of the salt and water exchanges in human nephritis and their relation to edema has resulted in a precise and scientific method of treatment which is highly effective in certain types of renal disease. Vascular hyposthenuria must be sharply differentiated from the hyposthenuria due to primary disturbance in the ability to secrete sodium chlorid. This discrimination is of real importance in the management of clinical nephritis.

Closely allied to this state of irritability of the vessels is their susceptibility to fatigue. This factor, like the phenomenon of vascular overirritability, should never be overlooked in treatment. It justifies the custom of giving caffein diuretics intermittently and in comparatively small doses. When a diuretic of this type is needed I use theocin. The initial dose of these drugs should always be small because of the possibility of constriction resulting. The response of the kidney vessels to digitalis seems to follow somewhat the same laws, inasmuch as such a drug as digitalis will produce dilatation of the kidney and constriction of the remaining splanchnic vessels, it seems not impossible that polyuria and hypertension are in their fundamental pathogenesis identical. In these vascular types of nephritis I urge the use of water and the common beverages. Water tests are most important guides to treatment, especially in the convalescent stage of acute nephritis. In tests for the excretion of water there should be absolute uniformity in the salt intakes. Therapeutic means of combating nitrogen retention are conspicuous by their absence, aside from enforcing a physiologic economy of protein on general principles. The observation of the uncoagulable nitrogen of the blood is of great importance prognostically, though it does not make the outlook any the less grave. In the same way the phenolsulphonephthalein test cannot serve in any way as a guide to treatment. In chronic passive congestion of the kidney it may frequently afford a most useful measure of the degree of improvement in kidney function during treatment.

The same considerations hold good for Wohlgemuth's tests for diastase. The treatment of edema is much more satisfactory. The salt-poor diet remains the most effective measure in the treatment of edematous types of subacute and chronic nephritis. With the restoration of kidney function and the absorption of edema, I have observed the return to normal of greatly delayed potassium iodid excretion. The potassium iodid test gives an interesting sidelight on kidney function and its restoration in these cases. What constitutes normal elimination depends on the test employed. I have been using the von Monakow test with starch paste and nitric acid, which makes forty-four hours the upper limit. The one essential guide to treatment, as Widal's studies have shown, is the absolute salt balance. It is immaterial practically, though highly important theoretically, whether the cause of the salt retention is in the tissues or in the kidneys. Salt and water are retained and the edema is largely dependent on this fact. The graphic record of daily salt intake and output, with the weight curve, permits of exact knowledge concerning the degree of salt retention.

The management of the salt intake in such cases of renal edema is altogether analogous to the management of the carbohydrate intake in mild diabetes. As long as edema persists, the salt of the diet should be kept at a minimum. After the absorption of the edema the ability to excrete added salt should be tested occasionally, and the increase in intake governed accordingly. By the exact estimation of sodium chlorid tolerance and the adjustment of intake at a point below the ability of the kidney to excrete salt, chronic cases may be kept free from edema over long periods of time, even when functional recovery is not complete. At the same time, the management of the water balance demands equal attention. This is of special importance in acute nephritis. Intelligent care is possible only with the use of graphic records of water and of salt intakes and outputs. The relation between intake and output in both substances is of more importance than absolute amounts. Not the least contribution which the study of renal function has made to the treatment of nephritis is its method of visualizing the actual response of the kidney to the therapeutic measures from day to day.

President's Address: Sanitation at Panama in Its Relation to Sanitation in the Tropics Generally

Dr. William C. Gorgas, Ancon, C. Z.: Panama, in 1904, when the United States began the construction of the Panama Canal, was universally looked on as being one of the most unhealthful spots in the tropical world. That this reputation was not undeserved, but was warranted by the facts in the case; that the sanitary measures put into effect by the United States have enabled the constructors of the canal to proceed for the past nine years with no greater loss from death than would have occurred if the same work were being carried forward in most parts of the temperate zone; that this work has been accomplished at no very great expense; that, therefore, similar results can be obtained either by communities or individuals in any part of the world or tropics, is my argument. In November, 1905, the last case of yellow fever occurred in the City of Panama, and in May, 1906, the last case in Colon. During 1906 the Sanitary Department was raised to its maximum efficiency and in May, 1907, the sanitary work had been accomplished. The death-rate from disease among employees

has been as follows: 1906, 39.51; 1907, 24.50; 1908, 8.68; 1909, 7.55; 1910, 7.50; 1911, 7.65; 1912, 6.37. These figures demonstrate that by 1908 there was a force of 38,000 employees on the Isthmus who were working in the sun, rain and weather at the hardest kind of labor, with a death-rate from disease of 8.68, not any greater than among similar men doing the same work in the United States.

It is interesting to speculate on what would have taken place if the President and the Secretary of War had acted in accordance with the recommendations of the executive committee and decapitated the men in charge. The methods used were based on the belief that yellow fever is a disease due to filth. By December, 1906, we had 9,000 non-immune connected with the commission, of whom 6,000 were Americans. It is probable that half of these would have died of yellow fever had sanitation remained as it was in 1905. This would probably have involved a suspension of the work till conditions could be corrected, thereby causing a delay in the completion of the canal of at least two years; probably public opinion would not have supported a project that involved such loss of life, and the work would have been delayed indefinitely. The actual expense of the measures that have accomplished these results has not been large, about $365,000 per year, or about one cent per day per capita. The expense of sanitation in the Isthmus is frequently spoken of as being large. This comes about from the fact that official reports give the expense of the sanitary department as having averaged $1,600,000 a year. Naturally in reading this report one assumes that the expense of sanitation and the expense of the sanitary department are synonymous; but not more than one-fifth of the expense of the sanitary department is involved directly in the measures that have resulted in the eradication of yellow fever and the control of malaria. More than half the expense of the department is involved in the care of the 1,800 sick that we have had constantly on hand. It is quite evident that if people can be protected against tropical diseases or conditions in Panama, the same thing can be accomplished in any other part of the tropics. The results at Panama are so in the limelight that they are attracting attention from all parts of the tropics.

(To be continued)

NATIONAL ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS

Ninth Annual Meeting, held May 8-9, 1913, in Washington, D. C.

The President, MR. HOMER FOLKS, New York, in the Chair

The Tuberculosis Problem of the Country and Small Towns

DR. CHARLES S. PREST, Waterford, N. Y.: The prevention of tuberculosis in the country and small towns is a man's job in the fullest degree and requires just as much, if not more, thought, experience, judgment, persistence and money per capita as in any large city. The difficulties that are met arise from the less highly developed local government, less expert and effective health officials, less inclination to be governed, less voluntary organization for practical social work, greater opposition to even temporary increased taxation, and the deep-rooted ignorance and belief in the heredity and fatality of tuberculosis. The ignorance in the country districts concerning tuberculosis is appalling. The education of the rural population concerning ventilation, the dangers of overcrowding, cleanliness of person and surroundings, the extent of the disease, its means of prevention, etc., is one of the most important phases of the work that can be undertaken, as well as the most difficult. The problem presents two features of surpassing importance: early diagnosis and adequate supervision. The one hangs on the other whichever way you take it—early diagnosis that adequate supervision may be possible, and adequate supervision, in order to secure early diagnosis.

The Tuberculosis Preventorium

DR. ALFRED F. HESS, New York: The preventorium may be called the latest development of the antituberculosis movement. The first to be founded is that at Farmingdale, N. J. Tuberculosis is implanted generally during childhood, and must be combated before adult life. The preventorium was designed to care for the most needy group of subnormal children, those who are not only poorly nourished, but also exposed to tuberculous infection in their homes. These children of the tuberculous poor are not only predisposed, but actually exposed to tuberculosis. The preventorium takes 600 of these children a year, gives them good food, a twenty-four-hour day in the open air, an intimate acquaintanceship with the fields and the woods, and practical lessons in hygiene. A two-hour school period is sufficient to keep the children up to grade. During the stay of from three to six months at the preventorium, the home condition of the children is investigated, the tuberculous father or mother is sent to a sanatorium, instruction is given as to cleanliness and hygiene, and relief is obtained when necessary from existing charitable societies. Every six months after discharge these children are visited, their condition is ascertained, and, if necessary, a second visit to the preventorium is advised. The children have so far conserved their gains in weight and strength remarkably well.

Ultimate Results in Patients Discharged from the Mont Alto State Sanatorium in 1908 and 1909

DR. ALBERT P. FRANCINE, Philadelphia: In 1908 and 1909 there were discharged from the Pennsylvania State Sanatorium at Mont Alto 399 tuberculosis patients whose homes were in Philadelphia. A careful personal study of each of these patients made in January and February, 1913, developed the fact that the majority of them had been able, after an average stay of six months at the sanatorium, to return to their regular work on full time and full pay, and that they had been working since their return for over two years. In those cases in which there had been a relapse after the return of the patients to the city, the relapse was usually the result of entering the sanatorium with the disease too far advanced. Almost all of those who went to the sanatorium in time are alive and well.

A Method of Finding Early Cases of Tuberculosis

DR. HARRY LEE BARNES, Wallum Lake, R. I.: About 50,000 persons with new cases of tuberculosis are constantly drifting over the country for long periods without even consulting physicians. Before they are found many of the patients become incurable and infect others. The significance of blood-spitting, pleurisy, chronic cough and night sweats should be well known to the public. A large percentage of the people have no definite idea about the various state and municipal sanatoriums or what consumptives may hope for by entering them. States and municipalities having sanatoriums ought to advertise them enough to let the people know what they can do. The ease with which consumptives can be influenced by advertising is well shown by the sale of consumption "cures." The sale of patent medicines advertised to benefit consumption has exceeded 17,000 bottles in Rhode Island in one year, an average of seventeen bottles for each death from tuberculosis. We should describe the early symptoms of tuberculosis in newspaper advertisements until they are stereotyped on the brain of everyone who can read.

Treatment of Progressive Cases of Tuberculosis

DR. MARY E. LAPHAM, Highlands, N. C.: The future treatment of progressive cases of pulmonary tuberculosis must be surgical rather than medical. There are two well-defined, distinct classes of the tuberculous, those who recover, and those in whom from the very start an inability to arrest the disease is manifest. In these progressive cases improvement may occur, but the patients cannot hold what they gain. As soon as this is recognized, the futility and danger of depending alone on good nursing, fresh air and rest must be admitted and surgical aid must be employed. This surgical assistance to the more natural methods of treatment gives the lung more complete rest, drives the blood from the engorged blood-vessels, keeps the lung from expanding, and saves it from the pulling and tugging of respiration. It collapses or forces the lung up

together: expels its poisonous purulent contents; keeps the lung clean and dry, and makes the growth of tubercle bacilli in it difficult or impossible. In many cases the bacilli in the sputum disappear after surgical treatment and thus the danger of infecting others during the recovery is removed. When a case of pulmonary tuberculosis belongs to the progressive type, to persist with medical measures alone may cost the life of the patient. Surgery should be tried promptly, before it is too late.

The Medical Side of the Tuberculosis Problem

DR. WILLIAM CHARLES WHITE, Pittsburgh: One of the burning questions of the day is whether tuberculosis is a sociologic or a medical problem. That such discussion goes on is probably a proof that it is both. We are seeking to discover if the sociologist should employ the doctor, or the doctor employ the social worker; or will the time come when all doctors and nurses will be social workers, and all social workers doctors or nurses? The reason for the social worker in tuberculosis will be found in the exclusion of tuberculosis from the general hospitals and other places of medical teaching, and the consequent ignorance of doctors and nurses on the whole question of this malady as a public health problem. The doctors who do know find more ready response to their teaching among the intelligent laity than among the profession. The majority of the problems in connection with the tuberculosis question, such as immunity, heredity, chemistry of lung and tubercle bacillus, cure, food values, etc., are medical in their nature, and must be solved by those of medical training. The social side of the question comes down to more and better food and better living conditions.

Whatever the future brings forth, the great feature is the universality of the malady, and it must be handled as are other universal conditions, such as, probably, childhood education. This would mean community units of tuberculosis control, probably one unit (composed of 100-bed hospital, dispensary, visiting nurses, educational bureau and babies' dispensary) for each fifty or a hundred thousand population for the intensive handling of such a district. All units should be correlated in municipal and state health and charity departments, and these in some ways connected with the federal Department of Health to control the interstate aspect of the disease.

One Year's Results at the Home Hospital

DR. EDWARD C. BRENNER, New York: Heretofore families in which one or both parents had tuberculosis were broken up, the patients being sent away to hospitals or sanatoriums and the children cared for in various ways. Under the Home Hospital plan, the family unit is preserved, the afflicted family occupying its own apartment in the hospital, and living under the best hygienic conditions. The patients are isolated as far as possible from the well members of the family, and receive the equivalent of sanatorium treatment. No special drugs are employed. The cure consists of a superabundance of fresh air, good food, rest and entire freedom from worry. The patients spend the day in reclining chairs on the roof and sleep at night in bedrooms with windows wide open, or on the open-air balconies attached to each bed-room. With improvement, a gradual return to a life of normal activity is attained. The children spend the day in the open and never come in close contact with the patients. Those who are old enough attend open-air school on the roof. Diseased tonsils and adenoids are removed, bad teeth are repaired, defective vision corrected—in short, everything is done to bring the children up to a normal standard.

During the past year twenty-seven families have been treated, comprising 133 individuals, of whom seventy-nine (adults and children) have been tuberculous. We have found distinct evidence of tuberculosis in 24 per cent. of the children, and another 27 per cent. are excellent candidates for the disease. All of these children have shown marked improvement during the year, and most of the pale, puny types are now wholesome, rosy-cheeked youngsters. The results obtained with the adult consumptives compare favorably with the reports of the leading sanatoriums; 61 per cent. have become apparently cured, 22 per cent. have had their disease arrested, and 11 per cent. are much improved. These astonishing results have been obtained in the very heart of New York City. The Home Hospital treatment costs only 40 to 50 per cent. as much as the ordinary methods of treatment.

Tuberculosis and Public Health

DR. H. R. M. LANDIS, Philadelphia: An analysis of the cases in 100 consecutive applications for assistance at the Henry Phipps Institute in Philadelphia illustrates how closely the tuberculosis campaign is connected with almost every other social and public health movement. For instance, among these 100 persons some were found to be immigrants and their tuberculous condition was closely allied to this fundamental fact. Others were victims of bad housing conditions, while still another group were tuberculous because of faulty personal and household hygiene. In a third group the problems were essentially economic, and it was necessary here to study the income of the families and their relation to sanitation and public health in their particular homes.

Reduction in the Tuberculosis Death-Rate, 1871 to 1912

MR. FREDERICK L. HOFFMAN, Newark, N. J.: A considerable amount of trustworthy statistical evidence is available to sustain the conclusion that the mortality from tuberculosis of the lungs has actually as well as relatively diminished in the United States during the last thirty years, and that on the basis of rates for the registration area, the saving of lives due to the campaign against this disease during the decade ending 1910 alone has amounted to nearly 200,000. The death-rate in this one decade has been diminished from 174.5 per hundred thousand of population to 139.7.

A study of the combined mortality from tuberculosis of the cities of New York, Philadelphia and Boston for 100 years, commencing with 1812, shows that the death-rate from this disease has persistently diminished, from 418.6 per hundred thousand population in the first decade of this period to 213.9 in the last decade. Furthermore this tabulation, which seems to be the first of its kind that has ever been made for any group of large cities in the world, shows that there has been a much more decided tendency toward a reduction of the death-rate since 1882. The death-rate from tuberculosis, which was 389.1 in 1881, had declined to 180.1 in 1912. These figures present the most conclusive evidence on record that the deliberate, thoroughly intelligent and nation-wide campaign against tuberculosis on the principle of its being an infectious disease and transmissible from man to man, has been successful beyond expectations.

Another study of fifty large American cities for the forty-year period beginning 1871 shows that the death-rate in this group of American cities has declined from 335 per hundred thousand in 1881 to 166 in 1911. The decline in Northern and Western cities was from 325 to 160 per hundred thousand, or 50.8 per cent. In the white population of Southern cities the rate declined from 301 to 150 or 50.2, while the colored population of southern cities showed a reduction from 668 to 423, or 36.7 per cent.

Another study of the mortality from tuberculosis of the lungs in the states of Massachusetts, Rhode Island and Connecticut gives further evidence that the decline in the death-rate from this disease has been a real one. The male death-rate from tuberculosis of the lungs in these three states has decreased from 276 per hundred thousand population in 1881 to 146 in 1911, or 47.1 per cent., and the female death-rate from 308 to 111, or 64 per cent. An important fact disclosed by this analysis is that the fall in the tuberculosis death-rate for women has been relatively greater than the corresponding decrease for men. Probably much of this relative difference is due to the fact that the sanitary conditions in workshops have not progressed with a rapidity equal to increased sanitation in the home. All the evidence obtainable from trustworthy sources confirms the conclusion that the reduction in the tuberculosis death-rate in the United States during the last forty years has not been less,

but in many cases more than in other civilized countries throughout the world.

The Relation of Industries to Tuberculosis

DR. B. S. WARREN, U. S. P. H. S., Washington, D. C.: Good wages and short hours have a marked favorable effect on the death-rate from tuberculosis by producing a better standard of living among the workmen. The problem of the prevention of tuberculosis is an economic one, dependent on the adjustment of the industrial relations between the laborer and the employer. In those industries in which the condition of the employees is the least satisfactory, the death-rate is highest. Statistics appear to prove the statement that while some occupations are of themselves causes of high death-rates, tuberculosis is not in this sense an occupational disease, but rather one due to inadequate compensation, with all that that means in the standards of living. This is shown by a study of a large number of government workmen. While many government employees are working under insanitary conditions, at the same time the death-rate among these men is reported to be very low, as shown by official reports for the year during which the investigations were made. Overcrowding, poor ventilation, poor light, piece-work, speeding-up, etc., all the bad conditions, except long hours, were noted among 4,000 employees, with only four deaths from tuberculosis during the year. On the other hand, all wages in this group of government employees were $9 per week or more, and the general average was much above that. All legal holidays, certain half-holidays, the benefits of the employers' liability act, sick leave and thirty days' annual leave were allowed in most cases. If standards as high as those prevailing for government employees prevailed in the various private industries, the death-rate from tuberculosis among working men would be lower. Furthermore, when the government standards as to sanitation are improved, and the wage scale adjusted or equalized in all departments, the tuberculosis death-rate for government employees will be lowered still more.

The Tuberculosis Problem from the Sociologic Point of View

PROF. JOHN R. COMMONS, Wisconsin Industrial Commission: The physician starts with the individual. The sociologist starts with his institutions. The physician looks on other individuals as sources of contagion or infection. The sociologist looks on them as owners of property. The one sees them as physiologic units; the other as possessors of power, or of that intangible property which we call "opportunity." Tuberculosis and occupational disease, safety and sanitation, infant mortality, hours of labor of women and children—these are some of the fields of scientific research and governmental administration in which the physician and the sociologist meet. Here the physician must go beyond physiology, contagion and infection and deal with the institutions of property, the family and the state, that make environment what it is. Here the sociologist must dip into physiology and pathology, if he would not go wrong in dealing with institutions.

A Report of the Present Status of the Investigation by the Public Health Service of the Friedmann Treatment for Tuberculosis

SURGEON JOHN F. ANDERSON of the Public Health Service, after a review of the circumstances connected with the announcement of a new treatment for tuberculosis by F. F. Friedmann which led to the appointment of a board consisting of himself and Passed Assistant Surgeon Arthur M. Stimson to investigate the method, said: In correspondence Dr. Friedmann had expressed a willingness to place at the disposal of such investigators all the facts at his command and afford them every aid to prepare a "comprehensive and impartial report," but at its first interview with Dr. Friedmann the board ascertained he was not willing to reveal all the details of his methods. He imposed as a condition to furnishing detailed information regarding the methods of preparation of his remedy, a recognition by the board of favorable results from the use of the remedy on patients.

The board in effect found that it would have opportunity merely to study a culture of the bacteria, to test its pathogenicity on lower animals, and to observe the effect of treatment by him of tuberculous patients with his finished remedy.

It will be recognized that such an arrangement was not satisfactory from a scientific standpoint, but in view of the great importance of the matter the conditions imposed by Friedmann were accepted. Arrangements were made with various hospitals to treat patients, most of whom had been for some time under the care of their visiting staffs. The investigations have been undertaken and conducted in an impartial manner. After considerable delay, ninety-four patients had received their first injection up to April 15, when it became necessary to inform Dr. Friedmann that on account of the halting progress in the demonstration we would be forced to limit our studies to these patients. Up to the present time five of these patients have received a second injection.

Time is necessary in order to properly evaluate the effect of the possible therapeutic action of the remedy, but it is necessary to guard against too great optimism in respect to its merits.

Without presenting in detail the condition of patients under observation, we are in a position to state that the effects thus far observed do not justify the confidence in the remedy which has been inspired by widespread publicity. In our opinion harm may have been done by this undue publicity in so far as it has lessened the confidence of tuberculous persons in well-recognized methods of treatment or interrupted their use, and we are constrained to advise against any lessening of those well-known measures which not only have effected cures but which have reduced the incidence of the disease.

We are aware that Dr. Friedmann does not wish to be judged scientifically on newspaper statements and he would undoubtedly disclaim responsibility for certain of those which have appeared. Nevertheless, it is on those that the public bases its opinion until replaced by reliable and unbiased scientific pronouncements supported by convincing data.

While Dr. Friedmann advised the simultaneous or combined intravenous and intramuscular mode of injection he has in the series of patients observed almost exclusively made use of the intramuscular method alone in pulmonary cases and a very considerable proportion of them have either developed no considerable infiltrate at all or have suffered from abscess formation. It is evident, therefore, that a very considerable proportion of these patients may expect their treatment at the hands of Dr. Friedmann to extend over a prolonged period.

Concerning the culture submitted to us, we may state that a series of experiments is under way. The bacillus has been found to be an acid-fast organism having properties quite different from those of any tubercle bacillus with which we are acquainted. It appears to be identical with an organism cultivated from a few loopfuls of the material used for injection, which Dr. Friedmann permitted us to place on culture media in his presence. We requested Dr. Friedmann to furnish us with a larger amount of this material for examination, but this he has declined to do. We can state, however, that living acid-fast bacteria are being injected by the intramuscular and intravenous method, although we are ignorant of what medium they are suspended in or what additional substance or substances may be contained in the final mixture.

MEDICAL SOCIETY OF THE STATE OF NEW YORK

One Hundred and Seventh Annual Meeting, held at Rochester, April 28-30, 1913

(Continued from page 1484)

Association of Uterine Growths with Goiter; Typical and Atypical Exophthalmic Goiter

DR. HENRY L. ELSNER, Rochester: I have made an analysis of 5,370 cases of internal diseases; 186 cases of goiter are included. Of this number 89 were simple uncomplicated goiter; 97 were diagnosed as belonging to the class of exophthalmic goiter; of this number 55 proved to be atypic

exophthalmic goiter; 42 were typical; 15 per cent. of all the cases of goiter proved to be associated with uterine myoma or fibromyoma. Since 1881 my clinical experience has demonstrated the frequent association of thyroid perversion, often hyperthyreosis, including simple goiter and exophthalmic goiter, typical and atypical with uterine growths, fibroid and myomatous. The blood-pressure in cases of goiter associated with uterine growths is normal, slightly elevated, or in occasional cases only little reduced.

DISCUSSION

DR. ALEXANDER LAMBERT, New York: Cases of exophthalmic goiter showing intestinal disturbance in the early stages are best controlled by feeding the pancreatic extracts. Those showing lack of energy in their work will respond quicker if given adrenals alone. There is a distinct difference with the uterine type. It is very marked in young girls who have gone through unfortunate love affairs. They have not only been sexually disturbed and stimulated, but their break-down comes in the shape of exophthalmic goiter.

DR. JOHN A. WITHERSPOON, Nashville, Tenn.: I have noticed for many years the relation of uterine trouble to exophthalmic goiter. I believe that we have a great many of these cases; just what relation they bear to each other we do not know, as we know very little of these internal secretions and their action on the economy. The removal of tumors from the uterus or the removal of the uterus itself does not seem to affect these patients very much. Only recently a woman had a uterine fibroid removed, and the shock, anxiety and worry of the operation exaggerated the exophthalmos and growth of the gland. In those cases we have hyperthyroidism produced from the excitement brought about by the preparation for operation.

DR. ABRAHAM JACOBI, New York: I have seen a few cases that would confirm Dr. Elsner's conclusions.

Certain Elementary Concepts in Education Applied to Medicine

DR. J. G. ADAMI, Montreal, Canada, recounted the aims and purposes of education, and dwelt at some length on the laws by which the New York State Board of Regents governs the preliminary education of doctors.

SYMPOSIUM ON DUODENAL ULCER

Etiology and Morbid Anatomy

DR. MARSHALL CLINTON, Buffalo: Duodenal and gastric ulcer are so closely allied anatomically and etiologically that in a discussion of the etiology of duodenal ulcer we must take some notice of the factors that produce gastric ulcer. A great amount of experimental work in the production of ulcer has been carried out by different workers. Ulcers produced by direct trauma of the stomach wall, by feeding filth to animals, and by using stomach scrapings injected into other animals to produce a cytolysis of the mucous membrane have been followed by acute ulcer. All this experimental work has failed to this extent: chronic ulcer of the stomach or duodenum has not been produced. Acute ulcers have been formed as a result of these various experiments, but they come under the head of acute ulcer, while by custom now when we speak of duodenal ulcer we mean a chronic indurated ulcer. Chronic ulcer is generally rounded or oval with the long axis of the ulcer at right angles to the axis of the stomach or duodenum. The gastric juice plays an undoubted rôle, for it is the usual clinical observation to find ulcer associated with an excessive quantity and a greater degree of acidity than normal.

As to the pathologic anatomy of ulcer, the ulcer has a typical punched-out appearance. Sections of the ulcer do not seem to bear out the old idea that thrombosis plays a part in its production. We believe ulcer on the mucous membrane and deeper structures to be the result of mechanical trauma, plus a chemical action of the gastric juice. To become chronic, this trauma must be repeated frequently. The disturbance of the action of the pylorus by reflex impulses from other structures or the increase in quantity and acidity are the essential causes of chronic duodenal ulcer.

The Diagnosis and Prognosis

DR. JAMES T. PILCHER, Brooklyn: In analyzing the histories obtained from about 200 cases of duodenal ulcer personally observed I recognize in the great majority of them four pre-eminent factors: (1) the chronicity of the complaint; (2) the periodicity of the exacerbations of epigastric distress; (3) the occurrence of pain of a peculiar character with precise time of onset; (4) the control of this discomfort by the ingestion of food or alkalies. In the cases observed lately the marked period of chronicity has been reduced, owing probably to the growing familiarity with the condition. I consider the most corroborative subjective symptom to be the peculiar effect that the ingestion of food has on the epigastric distress, which act, as I have noticed almost without exception, gives relief at once, at least in the earlier stages of the condition before complications have arisen. Gastric analysis showing a marked hyperacidity is considered merely as suggestive, and probably the most important test-meal findings are to be obtained by the analysis during one of the intervals free from distress, at which time it has been noted that the acidity is usually normal or subnormal. One of the most essential elements to be recognized in cases of duodenal ulceration is the etiologic factor of the process. In referring to the condition it might be advantageous, whether the case be treated medically or surgically, to prefix the surname indicative of the underlying cause suggesting the terminology, jejunoduodenal ulcer, ileocecal duodenal ulcer, appendicoduodenal ulcer, colonoduodenal ulcer, membranous pericolitic duodenal ulcer, static duodenal ulcer or ptotic duodenal ulcer.

The prognosis is regarded as a relative question. In anterior ulceration, owing to the facts that these ulcers are the ones that perforate most frequently and that they are the most frequent in occurrence, the prognosis is rather unfavorable, if such ulcers be allowed to continue their course. Those situated posteriorly, although seldom perforating into the abdominal cavity, are prone to inaugurate complications such as pancreatitis, common-duct obstruction and duodenal stenosis, which may eventually prove quite as dangerous as the acute perforation.

Complications

DR. JOHN B. HARVIE, Troy: The complications are cancer, hemorrhage and perforation, which will call for the most vigorous and energetic treatment. Obstruction due to contraction will permit of greater deliberation. Unfortunately, malignant disease has usually passed beyond all likelihood of successful surgical intervention when the diagnosis is made. I have met a number of cases of inoperable carcinoma occurring in the pylorus and upper part of the duodenum, starting at the base of an old ulcer, and while careful analysis of the symptom-complex might have led to an earlier diagnosis, I have not been fortunate enough to have these cases in time to be of material benefit to the patients. If there is one department of medicine in which diagnosis is called for more promptly than others, it is the right time to interpret the significance of serious abdominal lesions. The differential diagnosis between perforation of duodenal ulcer and perforation of any other hollow viscus will present difficulties, and interpretation of the site of the lesion when general peritonitis is established, and the abdomen distended with contents, make any attempt at localization largely speculative. Males suffer more frequently than females from duodenal ulcer.

Non-Surgical Treatment

DR. CHARLES G. STOCKTON, Buffalo: Treatment is not directed toward curing the ulcer, but toward controlling the patient and in so managing the digestive tract that the ulcer may heal spontaneously. The indications for treatment are: (1) to require that the patient be kept in bed continuously for several weeks, for it is known that by assuming the upright position, bending the trunk or making movements which involve the action of the abdominal muscles, the relations of the duodenum to other parts are changed and undue tension may thereby strain the walls of the ulcer; (2) to manage the patient so that involuntary motion of the pylo-

rus and duodenum may be minimized, that the elements of overtonicity and spasticity of the parts may be avoided; (3) to lessen the amount of gastric secretion, with decreased acid and enzyme activity of the gastric juice before it passes the pylorus. Epinephrin in gastric and pyloric spasm in four out of six cases was given with favorable results. In the use of epinephrin we have a fresh means of relieving a proportion of patients of gastric and pyloric spasm. There is another method which acts in overcoming pyloric spasm, and that is duodenal alimentation as advocated by Einhorn. We have in this method a new and improved means for the treatment of gastric and duodenal ulcer. I believe the time is near when this plan of treatment will supersede operative interference in a number of cases in which the need of operation is now felt.

Surgical Treatment

DR. JOHN B. MURPHY, Chicago: Acute cases yield very well to medical treatment. The best results are obtained by physiologic and physical rest. My personal observation of twenty-one years in work of this kind has shown that we secure better results in the chronic cases from surgical treatment; that we have greater freedom from recurrences. Surgical treatment is usually instituted at a time when it is not easy to save life; but we are making great strides. When one compares the mortality of duodenal perforation of fifty years ago with the mortality to-day, it is very much to the credit of the medical and surgical branches of the profession. Ninety-three per cent. of all lesions of the duodenum or duodenal ulcers occur on the anterior surface and in the first portion. When perforation occurs, stop the leak always. Do it quickly. It is unnecessary to do gastro-enterostomy at that time. Relieve the tension of the products of infection and of the material that has escaped into the free peritoneal cavity, using the Fowler position and lower abdominal drainage. Restore the patient's arterial tension immediately on the table, and while you are closing the abdomen have your assistant give intravenous transfusion if the patient is below par On this plan a great reduction in mortality has been made. The best results at present are obtained by following simple means, namely, infolding of the ulcer area after the plan of Mitchell, who reports nineteen cases, with eighteen recoveries.

DISCUSSION

DR. ALLEN A. JONES, Buffalo: Hunger pain is an important symptom in the diagnosis of duodenal ulcer. Most of the patients with duodenal ulcer that come to us have this hunger pain very marked. It is not a symptom, however, on which we should diagnose positively duodenal ulcer. Roentgenoscopy is important in the chronic cases in which adhesions have formed, or in which there is partial stenosis of the pylorus and duodenum just beyond. Hematemesis is as common with duodenal as with gastric ulcer. We should advise against surgery in all cases in which there is a profuse hemorrhage. Acute abdominal pain, at all times, with other symptoms is of extreme importance.

DR. MAX EINHORN, New York: I have had several cases of ulcer of the stomach which have come to operation later that presented the characteristic symptoms of duodenal ulcer. That duodenal ulcer is no more frequent than gastric ulcer can be proved by experience. Hemorrhage is not an indication for operation. I think that in 99 per cent. of the cases of duodenal ulcer the patients recover under careful, judicious medical treatment.

DR. ROBERT T. MORRIS, New York: In regard to acute duodenal ulcer calling for immediate treatment. I have one new point to offer, namely, that our whole tendency is to conserve the strength of the individual in such a way that he may produce his own leukocytes, his own phagocytes and carry on the processes of elimination himself.

DR. CHARLES L. GIBSON, New York: One pitfall in the diagnosis is the question of free air in the peritoneal cavity masking or obliterating liver dulness. I am sorry that this sign was invented because it is one of the greatest pitfalls we have. Practitioners have refused to make a diagnosis because this sign was absent. Another pitfall is to lay undue stress on blood examinations in duodenal ulcer. One sign that occurs as a transitory one comes within the first half hour, namely, pain, quite marked, in the supraclavicular fossa, right or left, more often the left in my experience. The indications for gastro-enterostomy in these cases are extremely restricted. I have not done this operation, and have no occasion to regret it.

DR. ANTHONY BASSLER, New York: Cases of duodenal ulcer with perforation are surgical; cases in which there is recurrent hemorrhage are surgical, even if the hemorrhage is moderate in amount.

Possible Errors in the Diagnosis of Abdominal Cancer: A Plea for Exploratory Laparotomy

DR. WILLIAM SEAMAN BAINBRIDGE, New York, illustrated his contentions with cases falling under the following categories: 1. Cases diagnosed as cancer, with no cancer present. 2. Cases of cancer, not recognized as such, but diagnosed and treated as something else. 3. Cases of small cancer, diagnosed as cancer, but having far more of something else present, the latter condition being mistaken for malignancy, or being considered too serious, in conjunction with the cancer to warrant operative interference. 4. Cases of advanced cancer, diagnosed as such, but made seemingly hopeless by an added condition which, in itself, is not of serious moment so far as the prognosis is concerned. 5. Cases in which the error in diagnosis concerns the type of malignant growth. Exploratory laparotomy is not advocated indiscriminately. Careful examination by all modern diagnostic methods applicable to the case, extending over a reasonable time, should be employed. Test meals, gastroscopic examinations, roentgenoscopy and the various other non-surgical diagnostic measures may be the means of plunging the patient into that slough of despond, the irremovable stage of cancer, when only palliative measures can be employed.

Radium in Surgery

DR. HOWARD A. KELLY, Baltimore: Radium is destined to produce a change in surgical and medical work, not less marked than the introduction of the Roentgen ray, perhaps even more decided. Radium in surgery will definitely cure many forms of cancer, especially in the early stages; it will cure 96 per cent. of skin cancer, recurrent uterine cancers if taken early, and some cases of rectal cancers; it acts most favorably on parotid growths; it will cure some cancers of the lip, tongue and breast, and it acts also very positively on sarcomas. It also cures various other fibrous and epithelial growths especially on the surface of the body. One of its happiest effects is in curing angiomas, even the large vascular growths which cannot be treated at all surgically. In gynecology radium acts happily, outside of its value in cancer, in checking the growth of fibroid tumors, in stopping uterine hemorrhages and in relieving some forms of pelvic inflammatory trouble. One of its happiest uses is in the cure of obstinate pruritus of the vulva and anus. In exophthalmic goiter there is a promise for a definite field of utility. Its use in surgery, dermatology and medicine bids fair to bring about either a realignment or a readjustment of the work in these special branches.

Tuberculin Treatment

DR. EDWARD R. BALDWIN, Saranac Lake: It is evident that tuberculin treatment is often given ignorantly. The object of the treatment is either to reduce the hypersensitiveness or to stimulate the tuberculous tissue to heal by intermittent reactions. Patients should be built up in health and nutrition and rested until acute symptoms subside. All bad complications, intestinal involvement, ulcerated larynx, fever of 100 F. or over and weakness are contra-indications. Scrofulous cases are often favorable. Reactions are to be avoided; they may be local, focal or general, with or without fever. The treatment is empiric and experimental in each patient. Rules about dosage are not hard and fast. Skin tests at

the start form some guide to dosage. Cures are not made by tuberculin alone, but may be assisted or retarded by it. It may produce much symptomatic good by lessening sensitiveness to itself or it may aggravate the disease.

Benzol in the Treatment of Leukemia

DR. JEROME MEYERS and DR. THOMAS JENKINS, Albany: Benzol is a valuable addition to the therapy of leukemia of any kind. Its institution, however, is so recent, and clinical experience still so scanty, that definite conclusions as to its intrinsic value should be held in abeyance. It seems to have no uniform action; in all cases it reduces the white cells, but in some, apparently those with very high counts, it does not reduce the leukocytes to normal, while in cases of from 100,000 to 200,000 it may give brilliant results with normal white counts, greatly diminished or normal spleen, distinct gain in weight and strength and loss of fever. On the other hand we may have paradoxical reactions with falling white counts and gain of strength with no change in the spleen, or we may find a decrease of the spleen with persisting high leukocyte counts, or there may be low counts with many pathologic leukocytes, or there may occur sudden leaps in the number of white cells. The red corpuscles and the hemoglobin are usually influenced beneficially. When Roentgen rays can be used in combination favorable results may be obtained, the blood returning to normal with no persisting myelocytes. It is probable that the results of benzol therapy are variable for two reasons: 1. The cases in themselves vary in intensity, and in the fundamental pathologic conditions or etiologic factors in the bone-marrow, the spleen or the lymphoid system. 2. The results are in some way dependent on the size of the dose of benzol, which dose may be either stimulating or depressing to the tissues involved, and this dose may be peculiar in a marked degree to each case or individual. We would therefore suggest that the effect of benzol be carefully checked by daily blood examinations so as to gage the optimum dose and to forestall any symptoms of benzol poisoning.

Prognosis in Infantile Paralysis

DR. WISNER R. TOWNSEND, New York: When a patient is first attacked the prognosis must be guarded. If it is of the pontine or bulbar type, or in an epidemic, with a high mortality, or in the very young or the very old, the prognosis is not so good as in other cases. The mortality may be put down as from 5 to 25 per cent. About 25 per cent. of the total affected may be of the abortive type. By the end of the second week electric examinations may enable one to make a rather positive prognosis as to which muscles will be affected, but no definite conclusion can be reached as to how far they will be affected and what the ultimate results will be before the end of six months. Definite conclusions can be given by the end of a year as to what the ultimate results will be. Deformities, both primary and secondary, can be predicted and thus prevented. Proper orthopedic treatment will give the best results.

Examination of the Exposed as a Factor in the Prevention and Relief of Tuberculosis

DR. JOHN H. PRYOR, Buffalo: At the Buffalo Tuberculosis Dispensary where the examination of the exposed was begun in 1907, and where the practice has gradually become more thorough, the following results are reported in 248 families in which there was one living case: Pulmonary tuberculosis found in one or more members, 35 per cent.; glandular tuberculosis, 8 per cent.; tuberculosis in some form, 43 per cent. In 87 families 100 cases of pulmonary tuberculosis were discovered. In 19 additional families 48 persons had tuberculous lymph-nodes—that is, they were probably tuberculous. In 113 families in which other members were examined and in which a death from tuberculosis had occurred other cases were reported in 40 per cent. of the members. In some families 3 or 4 other cases were discovered. Only those families are included in which examinations were made of most or all members.

During the last three years the necessity for more careful examination of the borders of the lungs along the spine and beneath the sternum has become apparent. These two regions are apt to be entirely overlooked. Auscultation of the sternum is particularly uncommon in practice. Yet the signs of a lesion occasionally are manifest there and absent elsewhere. This is especially true of children and young people. There may be evidence of disease of the bronchial lymph-nodes but the free borders of the lungs in the mediastinum should be searched also. In numerous instances when symptoms justified strong suspicion and all other regions betrayed no signs the focus was found beneath or at the edges of the sternum or close to the spine after repeated forcible inspirations and cough. In two instances the lesion was located at the edge of and under the sternum, and had followed sternal blows in football games. When children have made an apparent recovery the evidence of renewed activity or recurrence is occasionally elicited only along the edges of the spinal column.

NEW YORK NEUROLOGICAL SOCIETY

Meeting held April, 1913

The President, DR. SMITH ELY JELLIFFE, in the Chair

An Anomalous Case of Acromegaly

DR. M. NEUSTAEDTER: The patient is a Russian pedler, aged 30, with unimportant family history. Up to a year ago he was slightly alcoholic; eight years ago he had gonorrhea, but denied lues. Four years ago he began to have trouble with his sight, which constantly grew weaker. Three months ago he began to suffer from headache, which was constant up to a week ago. He had never vomited or suffered from nausea. About ten weeks ago his speech became affected, and at present he also complains of "drawing" pains in his limbs, especially in the left leg. He became depressed and began to lose his memory, especially as to recent events. He was always sleepy and rather irritable. His gait, which was formerly slightly ataxic, is now fairly good. He has gained 15 pounds in three months. There seems to be a beginning deposit of adipose tissue around the hips. His hair is becoming rather sparse and coarse; the skin is thick and moist. The lower jaw is becoming enlarged and the bones of the fingers are becoming thickened. The sella turcica is slightly enlarged. Speech is rough and deeper than formerly, and at times is rambling. His movements are rather clumsy, lacking energy, and he complains of sleepiness. His hearing is not affected. There is a marked impairment in his sense of taste on the left side of the posterior two-thirds of the tongue. Smell is much impaired on the right side. There is evident exophthalmos; the pupils are dilated, irregular in shape and unequal, the right being the larger. They fail to respond to light or accommodation. There is a left staphyloma and a double chorioiditis. The patient also presents a binasal hemianopsia, a myopia of 7 diopters, and a haziness of the vitreous and detached retinas on the temporal side of both eyes. There is a fine intention tremor of the hands and tongue. The superficial reflexes are present and lively; the knee-jerks are exaggerated; there is no Babinski or clonus. The motor power of the flexors of the left arm and leg is somewhat diminished. The Wassermann reaction is very strongly positive.

Juvenile Paresis

DR. SMITH ELY JELLIFFE: A girl, now aged 15, began to have pains and stiffness in her legs about four years ago, and attacks which were called "fits," during which she would become rigid but did not lose consciousness. About this time there was an apparent retrogression in her mental development, and since then she has slowly deteriorated. She showed the Argyll Robertson pupil, a tremor of the tongue and face, an infantile mode of speech, with a degree of hesitation that almost amounted to stuttering, and a loss of knee-jerks. The girl's father died at the age of 42 after a maniacal attack, and was a paretic. The mother has Argyll Robertson pupils. The patient has Hutchinson teeth.

Direct Treatment of Syphilis of the Central Nervous System

DR. HOMER SWIFT and DR. A. ELLIS: The technic which we have employed is to treat the patient intravenously with salvarsan or neosalvarsan, one hour later withdraw from 40 to 50 c.c. of blood into a sterile centrifuge tube, centrifugalize the blood and separate the serum from the clot. Then 12 c.c. of the serum are diluted with 18 c.c. of normal serum and heated to 56 C. (132.8 F.) for half an hour. A lumbar puncture is made and spinal fluid withdrawn until pressure is reduced to 30 mm. of cerebrospinal fluid. The 40 per cent. serum is injected by gravity through the lumbar puncture needle.

DISCUSSION

DR. JOHN A. FORDYCE: Although many of the nervous manifestations of syphilis occur several years after infection, in the great majority of cases, if not in all, involvement of the cerebrospinal system takes place during the secondary stage of the disease. It is at this time that there is a generalized dissemination of the spirochetes. It is reasonable to assume, therefore, that the infecting agent may remain latent in the cerebrospinal fluid for years, but under the influence of various contributing factors, it could cause during this stage, or later, meningitis, paresis or the complicated clinical picture of cerebrospinal syphilis. From the histories of patients who have come under my observation with tabes or other forms of cerebrospinal syphilis, I am impressed with the frequency with which they stated that they had had months or years before ocular paralysis or other manifestations of meningitis. During the early experiments with salvarsan as a therapeutic agent it was thought that one or two doses of the remedy would be sufficient to control the infection, and unfortunately this impression is still held by many practitioners, and it fostered the belief that salvarsan was not effective in the treatment of syphilitic conditions of the cerebrospinal system. As a matter of fact, many of these patients are aggravated by one or two doses, while, on the other hand, many of their symptoms are relived by the persistent use of the drug. The pains, crises, bladder symptoms and general nutrition of the patients are often greatly benefited. My plan of treatment in these cases is to give injections of salvarsan at weekly intervals, combining them with mercury at intervals of three or four days. In one case of paresis I gave twenty-one injections of salvarsan, about 10 gm. in all, with marked alleviation of the symptoms. The Wassermann reaction in this case had not been influenced by the treatment, and the cerebrospinal fluid at the last examination contained 90 cells, with a positive Wassermann and globulin reaction. I am becoming more and more convinced that salvarsan has no deleterious effect on the optic nerve. On the contrary, I have two cases under observation where it proved distinctly beneficial. In one of these cases the visual fields have enlarged, and whereas before the treatment the patient could not count fingers before one eye, she can now distinctly recognize features with the eye.

DR. B. SACHS: The theory on which this method of treatment is based is a plausible one. It appears to exert a direct effect on the syphilitic process in the central nervous system. Whether or not the change in the globulin content and cell count necessarily indicates an improvement in the patient's condition would have to be determined by a much longer experience with this method of treatment, and the results would be watched with great interest by clinicians. In the treatment of syphilis of the central nervous system with salvarsan, I have been struck by several points. One is that the persistence of the Wassermann reaction, in both the blood and spinal fluid, seemed to be out of relation to the intensity of the morbid process.

DR. E. D. FISHER: On the strength of recent reports, I have employed salvarsan in parasyphilitic conditions to a considerable extent, but in no instance could the results be regarded as marvelous. I have found it effective in those cases which were clinically designated as cerebrospinal syphilis, in which the pathologic changes differed from those of general paresis or tabes, although the differential diagnosis was often obscure.

DR. D. M. KAPLAN: The use of a large quantity of spinal fluid tends to make the positive Wassermann persistent, notwithstanding that the other serologic tests became negative.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

May, V, No. 5, pp. 345-424

1 *Gastric Motility in Infants Studied Roentgenographically. M. Ladd, Boston.
2 Case of Amyotonia Congenita with Autopsy. N. C. Foot, Chestnut Hill, Mass.
3 Case of Congenital Myxoma of Feet. M. Leitao, Rio de Janeiro, Brazil.
4 *Vaccine Treatment of Whooping-Cough. E. M. Sill, New York.
5 *Metabolism of Child with Complete Absence of Bile from Intestines. W. S. Parker, Boston.
6 Scientific Basis for Artificial Feeding of Infants. J. Howland, Baltimore.

1. Gastric Motility in Infants.—Ladd has based his observations on about fourteen cases, or twenty-four series, with about 124 plates. He says that one of the most striking things observed is the curious lack of peristalsis to be seen in infants' stomachs as compared with adults. Only twice has he been able to show the outline of the duodenum distinctly. The reason for this was not clear, unless it was that the food remains in the duodenum only a short time, and that the plates were taken at such long intervals, comparatively, that the duodenal stage was missed. In a case of normal digestion, if the negative is clear-cut, bismuth appears in the small intestines as soon as the feeding is completed, showing that a considerable amount of food passes into the duodenum without undergoing gastric digestion. The stomach appears to empty itself of the greater part of its contents in from one and one-half to two and one-half hours, the emptying process being more rapid in some cases than in others. After the greater part of the stomach contents has passed into the small intestines, a considerable residue remains, which is emptied very slowly, often remaining for four and one-half to five or even seven and one-half hours, in both breast-fed and bottle-fed babies. When a bismuth feeding is given and another feeding follows at the end of the regular two and one-half or three hour interval, the bismuth residue from the first feeding does not appear to mix intimately with the new feeding, but, as a rule, passes out into the small intestines much more quickly than it does when left to itself. The suggestion is strong that the distention of the stomach by a new feeding, if not excessive, stimulates peristalsis and favors the expulsion of the bismuth residue into the duodenum. On the other hand, if the distention is excessive, peristalsis may be inhibited and the emptying time of the stomach delayed.

In congenital pyloric stenosis the dilatation and peristalsis is marked; the pyloric end showing the same prow-like formation seen in adults. After a posterior gastro-enterostomy the stomach appears to expel its contents through the artificial opening quite as rapidly, if not more so, than the normal stomach. As the opening of the pylorus is dependent on the secretion of hydrochloric acid in the stomach, the early appearance of bismuth in the intestines and the expulsion of the major part of the contents within two hours would suggest that the bismuth does not of itself interfere with the normal motility of the organ. Moreover, the negatives show in one series that the bismuth had disappeared from the stomach, in one experiment in two and one-half hours, in another in seven and one-half hours—the difference in the emptying time being due presumably to the differences in the composition of the food, the amount of bismuth being the same in both cases.

4. Vaccine Treatment of Whooping-Cough.—Thirty-three patients with whooping-cough were treated by Sill with the pertussis vaccine, and in all the effect of the vaccine was to diminish markedly the number and severity of the paroxysms and the amount of vomiting. Absolutely no untoward effects from the use of the vaccine were noted. There were no complications in the cases in which the vaccine was used. No abscess formation, or even slight temporary inflammation or

swelling at the site of the injection, and no general constitutional symptoms occurred. The longest time any of the children coughed was twelve weeks and four days. The longest time any child coughed after it was put under vaccine treatment was nine weeks and one day, the average length of time being four and one-half weeks. The injections were given every two or three days in most of the severe cases, and in the very severe cases every day for a few days, until the symptoms were relieved; the milder cases did not receive the vaccine so often nor so much at a time.

In giving the vaccine Sill was guided more by the severity of the disease than by the age of the child. The youngest child treated was 1 month old and the oldest was 6 years. Most of the children were from 6 months to 3 years of age. The dose of the vaccine varied according to the number and severity of the paroxysms, from twenty million bacteria in the mild cases to sixty million in the severe cases. The cases that were seen early in the attack, before the paroxysms had attained their height, seemed to respond more quickly to treatment and their course was shorter. In all cases, however, after one to three injections, the number and severity of the paroxysms was markedly lessened. Some children seemed to respond better to treatment than others, and Sill attributes this to the fact that the dosage was given irrespective of the age; therefore, the younger children got a larger dose proportionately, and, as a rule, these latter were the ones that responded most quickly to the vaccine and had the shortest attacks after treatment was begun. Sill points out that this fact is important, since (heretofore) these young babies are so apt to have pneumonia complicating or accompanying pertussis, with fatal results.

It was found that the children did better when the vaccine was given in moderately large doses at frequent intervals of one or two days. The correct dosage for the mild cases, according to Sill, is fifty million bacteria given every other day, while in the severe cases this amount should be given every day, or one hundred million every other day. The vaccine is given under antiseptic precautions, subcutaneously, with the ordinary glass syringe, the injection being given in the abdomen or buttocks. Prophylactic treatment was instituted by giving immunizing doses of pertussis vaccine to children in a family in which one of the children was under treatment for whooping-cough. These children were watched over a period of two months, and although they had never had whooping-cough and were constantly exposed to the disease, did not contract it. It would seem, then, that the vaccine confers immunity to the child injected with small doses. One child of 5 years was given four injections of twenty million bacteria each, over a period of one month; another in the same family, 3 years of age, got nine injections of twenty million each, over a period of one month; neither child developed pertussis.

5. **Metabolism of Child with Absence of Bile from Intestines.**—From the study of a case of absence of bile from the intestinal tract Parker concludes that nitrogen metabolism is normal; fat metabolism is greatly reduced; the presence of bile is necessary to normal fat metabolism. A child not otherwise ill, but unable to digest fat on account of absence of bile from the intestine, can, if stomach and pancreatic functions are normal, digest sufficient protein and carbohydrate to maintain nitrogen equilibrium and to gain weight. The negative urobilinogen test is evidence of complete absence of bile from the intestine.

Arkansas Medical Society Journal, Little Rock

April, IX, No. 11, pp. 255-282

7 Pathologic Uterine Hemorrhages. W. R. Brooksher, Fort Smith.
8 Indispensable Adjuncts in Diagnosis. E. D. Holland, Hot Springs.
9 Laryngeal Diphtheria. R. H. T. Mann, Texarkana.
10 Management of Chronic Cystitis in Female. T. J. Stout, Brinkley.
11 Cooperation Between Physician and Pharmacist Through Prescribing of Pharmacopeial and National Formulary Preparations. E. G. Eberle, Dallas, Tex.
12 *Physician, Pharmacist and Proprietary Medicine. A. E. Cox, Helena.

12. **Physician, Pharmacist and Proprietary Medicine.**—Many American pharmaceutical houses, according to Cox, are devoting their energies to the devising of pharmaceutical specialties, which are mixtures of well-known medicaments so fixed up that they are both palatable and of pleasing appearance, and having names that mean nothing and often are therapeutically suggestive. Manufacturing pharmacists would do well, in Cox's opinion, to devote more time to refining many of their products and leave to the doctor to prescribe and to the retail druggist to prepare his prescriptions. Speaking of "ready to take" preparations, he says:

> Are we not making a great error to prescribe such a combination? Because, first, from the standpoint of our patient, he gets no more by our prescribing this ready-made preparation, which might well be compared to the ready-made suit in contrast to the cut-to-fit, made-to-order garment; second, from the standpoint of a physician, we cultivate indolence in fitting such a combination of drugs to many cases when by working out a formula for each case and meeting the different indications in that particular case our familiarity with drugs is increased and we thereby become more expert as therapists, and in the end we are enabled to accomplish that which may be reasonably expected of our profession. Third, and last, we are not treating our druggist and pharmacist right. He has spent anywhere from two to four years at college fitting himself for this work, and he is certainly capable of compounding our prescriptions properly, if we will give him an opportunity and allow him to earn a legitimate profit in doing this and not make him an agent for the hundreds of ready-made preparations, hand-me-downs, which, unfortunately, are manufactured more for the interest of the house than for the interest of the consumer.

Boston Medical and Surgical Journal

May 1, CLXVIII, No. 18, pp. 637-672

13 *Localized Osteomyelitis of Long Bones. C. C. Simmons, Boston.
14 *Infections of Upper Urinary Tract in Infancy and Childhood. R. M. Green, Boston.
15 Views of Plato and Freud on Etiology and Treatment of Hysteria. J. W. Courtney, Boston.

13. **Localized Osteomyelitis of Long Bones.**—Simmons believes that mild acute localized osteomyelitis is often overlooked in its early stages, but when recognized and treated promptly recovery usually occurs in a few weeks. It makes little difference, he says, what type of operation is performed in the subacute cases, cases of less than one year's duration, if it is thorough. The results are almost uniformly good. In the chronic, long standing cases of bone abscess operations such as are performed in the earlier cases with success often give unsatisfactory results, as the endosteum is not capable of filling in the defect. No definite rule as to the type of the operation can be laid down, but each case should be considered individually. When possible it would seem best to obliterate the cavity with living tissue flaps.

14. **Infections of Upper Urinary Tract in Infancy.**—Green is convinced that in infants and children infections of the upper urinary tract, though infrequent, are likely to occur without adequate apparent antecedent cause. Their onset is acute, their clinical picture definite, their recognition often missed on account of their simulation of other infectious conditions. Their two most usual forms are acute pyelitis and acute inflammatory nephritis. The latter is most usually hematogenous in origin, the former probably proceeds by lymphatic extension from the intestine. Predisposing causes are calculi, constipation, phimosis, anal fissures and foci of infection elsewhere. The classic signs of both are pyrexia, pyuria and tenderness in the costovertebral angle. Differential diagnosis depends on examination of the urine. The treatment consists in rest, milk diet, aqueous diuresis, moderate catharsis, urotropin, with sodium benzoate, potassium citrate, or vaccine, in obstinate cases; surgery, only as a final measure.

Journal-Lancet, Minneapolis

April 15, XXXIII, No. 8, pp. 223-247

16 Strangulated Inguinal Hernia in Early Infancy: Report of Case in 18-Day-Old Infant. A. N. Collins, Duluth, Minn.
17 Some Very Acute Cases of Appendicitis in Childhood. N. L. Werner, Red Wing, Minn.
18 Analysis of 13,000 Cases for Errors of Refraction. G. B. Granger, Rochester, Minn.
19 Four Cases of Tubal Pregnancy. T. F. Riggs, Pierre, S. D.

Journal of Experimental Medicine, New York

May, XVII, No. 5, pp. 499-592

20 *Comparative Studies on Cancer Cells and Normal Cells. R. A. Lambert, New York.
21 Bacteriology and Vaccine Therapy of Distemper in Horses. W. Lintz, Brooklyn.
22 *Experiments on Transmission of Scarlet Fever to Lower Monkeys. G. Draper and J. M. Hanford, New York.
23 Experimental Pulmonary Tuberculosis in Dog. P. A. Lewis and C. M. Montgomery, Philadelphia.
24 Antigenic Properties of Globin Caseinate. F. P. Gay and T. B. Robertson, Berkeley, Cal.
25 Renal Lesion of Experimental Cantharidin Poisoning. R. M. Pearce, Philadelphia.
26 *Value of Mallory's Connective Tissue Stain for Demonstration of Variation in Thyroid Colloid. A. P. Jones, Madison, Wis.
27 *Results of Serum Treatment in 1,300 Cases of Epidemic Meningitis. S. Flexner, New York.
28 Paralysis in Dog Simulating Poliomyelitis. S. Flexner and P. F. Clark, New York.
29 Immunization of Large Animals to Pathogenic Trypanosome (T. Hippicum-Darling) by Means of Avirulent Strain. S. T. Darling, Ancon, Canal Zone.
30 Action of Pneumococcus on Blood. E. E. Butterfield and F. W. Peabody, New York.

20. **Cancer Cells and Normal Cells.**—A series of comparative studies on cancer cells and normal cells was made by Lambert during the past year. The first report on this work dealt with the susceptibility to heat of sarcoma cells and connective tissue cells. The present report is limited to a consideration of the general character of growth *in vitro* of the same two tissues with special reference to cell division. Lambert claims that in primary cultures sarcoma cells exhibit a much greater activity than do normal connective tissue cells grown from the adult blood-vessel; there is a shorter latent period, ameboid phenomena are more marked, and cell multiplication proceeds more rapidly. In secondary cultures sarcoma cells are less active than in primary cultures; connective tissue cells, on the other hand, show a markedly accelerated growth. Connective tissue cells are more easily propagated over long periods *in vitro* than are sarcoma cells; they multiply actively in cultures more than three months old.

Lambert found the method of tissue cultivation is well adapted to the study of normal and pathologic cell division; the nuclear changes are easily discernible in the living cell as division proceeds, and staining methods may be applied to verify observations on the unstained structures. Atypical mitoses of several kinds are found in cultures of sarcoma cells but are not seen in growths of connective tissue. The time required for division in rat connective tissue cells kept at body temperature (38 C.) varies within relatively narrow limits (twenty to fifty minutes); sarcoma cells, on the contrary, exhibit marked variations and several hours may be required. In studies on living cells amitotic division has not been observed by Lambert in either normal or tumor tissue. Evidences of nuclear budding, however, with the formation of cells containing several nuclei of irregular size have been noted. The development of a cell with two nuclei from a mononuclear cell by mitotic division of the nucleus without division of the cytoplasm has also been observed.

22. **Transmission of Scarlet Fever to Monkeys.**—The experiments made by Draper and Hanford were varied as much as possible, both with respect to the character of material and the site and method of inoculation, on the one hand, and the conditions bearing on the susceptibility of the animals on the other. The routes of introduction were through the mucous membranes, skin, stomach, joint cavities, blood-stream, peritoneum and brain. It seemed possible that repeated inoculations at three-week intervals over a long period might bring about a state of hypersensitiveness and so lead to infection. Consequently several monkeys were treated in that manner. The animals stood the inoculation well and showed no reaction of any kind. In this series most of the inoculations were made by swabbing the scarified mucosa with infected material, and by submucous injections in the throat and nose with a hypodermic needle.

With the view of adapting a virus to an unusual host, two series of experiments were undertaken, in which infected material was easily accessible for removal. The groin was used in each series, but the inoculation material differed. Series A received subcutaneously the supernatant fluid from an emulsion of fresh tonsils from scarlet fever patients, whereas Series B was given an emulsion made from tongue scrapings. It is interesting to note that after the first passage the inguinal lymph-nodes were sterile, although in some cases enlarged. The first three animals of Series A were treated as described above and the inguinal nodes were removed and an emulsion made from them was reinjected into another monkey. The last three animals of this series were treated in a similar way, except the final one, which received the emulsion of inguinal nodes partly in the brain and partly in the peritoneum. Series B was a repetition of Bernhardt's method. Both series were negative.

The main point made by Draper and Hanford is the fact that monkeys are highly resistant to infection with microörganisms from human beings. Therefore, they believe that the reported successful transfer of scarlet fever to both higher and lower monkeys is not definitely established. In the course of their experiments the infectious agent was carried over to the monkeys and the failure to cause infection probably proceeded from the insusceptibility of the monkeys employed, or to the manner of introducing the agent. The temperature curve and leukocyte count of monkeys they regard as unsatisfactory criteria for the diagnosis of disease in those animals. So far as scarlet fever is concerned monkeys frequently have transient blotchy, erythematous eruptions on the face and neck, and almost always a bran-like desquamation.

26. **Mallory's Connective Tissue Stain.**—Jones found that Mallory's connective tissue stain used in connection with fixation of tissue by Zenker's fluid or bichlorid of mercury demonstrates the presence or absence of iodin in the thyroid colloid, as is evidenced by parallel chemical determinations, iodin feeding and test-tube experiments. Greatly increased activity of the heart is accompanied by a loss of thyro-iodin from the colloid of the thyroid. This method, while apparently not adaptable to clinical use, Jones believes, may prove of value in further experimental work on the thyroid.

27. **Serum Treatment in Epidemic Meningitis.**—The data brought together in this report have been gathered by Flexner from a wide territory and for a period extending over several years. The antimeningitis serum was first employed in 1906 and the latest figures relating to its use included in this report were furnished in 1912. He says that there is no longer doubt that the serum has come to be applied under conditions fairly representing all known manifestations of epidemic meningitis. Hence the test of the serum treatment may be regarded as having been a rigorous one. The initial difficulties surrounding the administration by direct subdural injection have been largely overcome and doubtless will be still further mastered. Already the serum is being successfully applied in private as well as in hospital practice. This gain will probably be reflected in a still further diminution of the mortality since early injection plays such a large part in determining the results achieved. The 1,300 cases studied in this report are a part only of a far greater number of cases actually treated with the serum supplied by the Rockefeller Institute. It was not found possible to secure histories of all the patients treated; but Flexner does not believe that the results of the analysis would have been essentially different if reports of a still larger number of cases had been returned. The decision arrived at is not based on statistical computations alone, but on objective data as well that are not readily misinterpreted.

The number of serum-treated patients subjected to analysis is 1,294. They have not been selected and a single exclusion has been practiced. The results were: Recovered, 894; died, 400—30.9 per cent.

The histories of 830 cases permitted of a judgment as to the manner of termination, and it was ascertained that in 30 per cent. the cessation was abrupt, or by crisis. Of the 1,294 patients fifty-six showed relapses after greater or less intervals of time. Prompt resumption of the serum injections often but not invariably sufficed to control and suppress the reinfections. Of the fifty-six patients forty recovered and sixteen died. Among them the mortality was 28.6 per cent.,

Mortality according to the period of injection of the serum:

Period of Injection	No. of Cases	Recovered	Died	Per Cent. Recovered	Per Cent. Died
1st to 3d day.....	199	163	36	81.9	18.1
4th to 7th day	346	252	94	72.8	27.2
Later than 7th day ..	666	423	243	63.5	36.5
Totals	1,211	838	373	69.2	30.8

Mortality according to age:

Age	No. of Cases	Recovered	Died	Per Cent. Recovered	Per Cent. Died
Under 1 year.....	129	65	64	50.4	49.6
1 to 2 years.....	87	60	27	69.0	31.0
2 to 5 years.....	194	139	55	71.6	28.4
5 to 10 years.....	218	185	33	84.9	15.1
10 to 20 years.....	360	254	106	70.6	29.4
Over 20 years	288	180	108	62.5	37.5
Age not given.....	18	11	7	61.1	38.9
Totals	1,294	894	400	69.1	30.9

Mortality according to age and period of injection:

Age	Injected 1st to 3d Day				Injected 4th to 7th day				Injected Later than 7th Day			
	No. of Cases	Recovered	Died	Per Cent. Died	No. of Cases	Recovered	Died	Per Cent. Died	No. of Cases	Recovered	Died	Per Cent. Died
Under 2 years..	13	12	1	7.7	37	28	9	24.3	159	81	78	49.1
2 to 5 years..	30	24	6	20.0	66	49	17	25.8	93	63	30	37.3
5 to 10 years..	55	49	6	10.9	69	61	8	11.6	77	61	16	20.8
10 to 20 years..	67	58	9	13.4	106	73	33	31.1	171	115	56	32.7
Over 20 years..	34	20	14	41.2	65	39	26	40.0	164	101	63	38.4
Totals	199	163	36	18.1	343	250	93	27.1	664	421	243	36.6

indicating that the relapses respond somewhat less well to the serum than the primary infections. The complications and sequels are reduced in number. In fact, the number of permanently injured among the serum-treated has become very small. Of all the severe sequels deafness has remained least influenced. Unhappily, injury to the internal ear takes place very early and sometimes before the diagnosis of meningitis has been made. In view of the great reduction in other severe effects, Flexner hopes that even this one may be diminished by a more uniformly early application of the serum. The arthropathies have not only been reduced in frequency but they have been shown to be amenable to direct injections of the serum. Undoubtedly the tendency to hydrocephalus in the young has been diminished, and the intraventricular injection of the serum has operated in several instances to abolish infection and inflammation of the cerebral ventricles and to reestablish communication between the ventricles and the subdural space of the spinal cord. Recovery, therefore, has been rendered complete.

Kansas Medical Society Journal, Kansas City

April, XIII, No. 4, pp. 139-182

31 Conservation of Ethmoid. J. E. Sawtell, Kansas City.
32 Inertia Uteri. E. W. Reed, Holton.
33 Hemorrhages—Antepartum and Postpartum. E. A. Reeves, Kansas City.
34 Sinusitis. C. Zugg, Kansas City.
35 Foreign Bodies in Air Passages and Esophagus. R. H. T Mann, Texarkana.

Maine Medical Association Journal, Portland

April, III, No. 9, pp. 1263-1310

36 Preliminary and Postoperative Treatment of Abdominal Operations. W. L. Cousins, Portland.
37 Certain Aspects of Arteriosclerosis. T. J. Burrage, Portland.
38 Evils Caused by Poor Development of Upper Jaw. S. J. Beach, Augusta.
39 Cancer. D. Cragin, Waterville.

Medical Record, New York

May 3, LXXXIII, No. 18, pp. 783-828

40 Pathogenesis of Gastric Crises of Tabes. W. Castelli, New York, and T. Pinel, Paris.
41 *Newer Ideas on Cancer Etiology. L. D. Bristol, Syracuse, N. Y.
42 Results of Operation for Gastric Ulcer. A. F. R. Andresen, Brooklyn.
43 Passing of Parasyphilis. S. Pollitzer, New York.
44 Significance and Management of Hypertension. H. F. Stoll, Hartford, Conn.
45 Post-Mortem Ophthalmoscopy. M. H. Kahn, New York.

41. **Cancer Etiology.**—After a brief review and criticism of the older theories, and a consideration of recent facts brought out in relation to the subject, Bristol suggests some new ideas as to the cause or causes of cancer, and treats the subject from the broad standpoint of a combination of biology, chemistry, physics, physiology, bacteriology and pathology rather than to consider it from the standpoint of any one of these alone. As a basis for the development of cancer, primary and secondary "precancerous" stages are discussed; the primary stage being local cell and tissue degeneration or necrosis due to all the known causes of such changes—a pathologic problem involving mechanical, chemical, physical, parasitic and physiologic factors; the secondary "precancerous" stage being a local disturbance of chemical equilibrium, a chemical rearrangement, including an affinity of these degenerated areas for, and an attraction to them of, certain inorganic salts of the blood—a problem of local disordered metabolism involving physical and chemical conditions in cell and tissue. It is then suggested that such a change in local chemical environment may influence the growth of neighboring cells by causing them to take on increased permeability, absorptive powers and oxidations, and lead to accelerated activity and growth, even to malignancy. Attempt is finally made to adapt these ideas to the important phenomena of cancer. Bristol says, for instance, that the common sites for the development of cancer, namely, the uterus, the stomach, the breast, the bowel, the skin, etc., are, in about the same ratio of occurrence, corespondingly liable to one or more of the primary causes of tissue degeneration, leading eventually to an attraction for the organic salts of the blood and an upset in local chemical equilibrium. The degenerated or dead cells of uterine glands, following chronic inflammation, disuse or overactivity; the dead or dying cells in a chronic gastric ulcer; the local necrosis in a breast following an abscess; the scar tissue resulting from a past typhoid or tuberculous ulcer in the bowel or from an old Roentgen ray burn of the skin, are all areas which have an affinity for inorganic salts of the circulation, and in each instance the dead cells show changed chemical reactions. Bristol believes that metastases are formed by the transportation of cells from the original growth, and that conditions are fairly well maintained in the medium through which they are carried (either the lymph or the blood) which encourage their continued division and growth, and that such growth is aided by a lessened general or local tissue resistance on the part of the diseased person. Loss in weight and strength, and anemia are rather common in all progressing cases of cancer, and these are not necessarily associated with obstruction to food or failure in appetite. These symptoms may be brought about by a disorder and disproportion in metabolism in which the tumor cells are rapidly absorbing food and salts from the blood and lymph, to the detriment of the other tissues of the body which are not only becoming starved, but at the same time are unable to give off those waste products which they contain, thereby resulting in more or less auto-intoxication. A disorder in general metabolism caused by even a small tumor may be as great in degree as the disorder in metabolism set up by such comparatively small bodies as the thyroid, parathyroid, ovary or pituitary body when their physiologic activities are disturbed.

Missouri State Medical Association Journal, St. Louis

April, IX, No. 10, pp. 323-356

46 Roentgenotherapy in Carcinoma About Eye. E. H. Skinner, Kansas City.
47 Treatment of Anterior Poliomyelitis. A. O'Reilly, St. Louis.
48 *Dyspepsias, with Special Reference to Diagnosis. G. B. Eusterman, Rochester, Minn.
49 Immunity. J. R. Hall, Napton.
50 *Self-Invaginating Hemostatic Stitch for Appendix Stump. J. H. Outland, Kansas City.
51 Plea in Behalf of Unborn. T. F. Lockwood, Butler.

48. **Dyspepsia.**—Eusterman points out that a functional dyspepsia may complicate a surgical lesion. Cases with early, mild, indefinite gastric disturbances dependent on gall-bladder or appendiceal disease are often included in this group until subsequent, localizing symptoms explain the probable etiology. Cases of functional hyperacidity may simulate ulcer. Test-meal analyses of hyperacid cases and chronic catarrh are similar to those found in gastric or duodenal ulcer and cancer, respectively. A mixed neurosis affecting both sensation and mobility, and accompanied by symptoms of general neurasthenia, constitutes the obscure and complex disorder known as neurasthenia gastrica or nervous dyspepsia. Alterations in the position of the stomach, whether congenital or acquired, oppose a mechanical obstacle to the propulsion of food into the duodenum and by causing secondary perversions of the other gastric functions may give rise to a form of dyspepsia which can only be distinguished from gastric neurasthenia by careful examination. The essential factors in the proper diagnosis of gastric and allied conditions which cause dyspepsia, according to the author, are: careful history taking; routine, thorough physical examination; a routine test-meal examination; if necessary, a skiagraph series or fluoroscopic study of the gastroduodenal area; a correct interpretation of all the data at hand; the general attitude of the patient, his general appearance, etc., should be observed. The careful physician should inquire into the daily habits, social environment, manner of eating, nature of food, condition of teeth, etc. He should correct the diet, urge proper mastication and institute natural, therapeutic or surgical measure as the case may be.

50. **Appendix Stump Treatment.**—The steps of the method which Outland has used successfully in 539 cases are as follows: The meso-appendix is ligated as usual. The junction of the appendix and caput coli is caught in a curved clamp, the convexity being toward the bowel; another curved clamp is fastened just above, and the appendix is cut close against the lower clamp. (This step does not differ from the same step in any appendectomy, except that the stump is cut as close as possible to the cecum.) A Lembert suture of linen thread is carried across the clamp and a stitch is taken parallel with the clamp. It is again carried across the clamp and a corresponding suture taken on the opposite side. The last stitch is passed beneath the clamp again. The end of the suture with the needle attached is taken in the left hand, the handle of the clamp is taken in the right hand, the assistant pulls on the other end of the suture, as the clamp is gently released and the jaws withdrawn from under the loops. Invagination is accomplished more perfectly by pulling on the meso-appendix end of the thread. The curved clamp is used because there is no difficulty in keeping the loops of the thread over the clamp until it is ready to be taken off. By using a rather heavy clamp the tissues between the jaws are so crushed together that no accident has been experienced by having the bowel contents escape before the ligature is drawn taut. The two ends of the thread are brought over and tied. After tying and before cutting, a loop is made under the appendicular artery and again tied. It is seldom necessary to reinforce the stump by other superimposed stitches. This suture properly placed is hemostatic.

New Mexico Medical Journal, Las Cruces

April, X, No. 1, pp. 1-28

52 Advantages of Combined Abdominal and Transpleural Operative Technic for Liver Abscess. W. L. Brown, El Paso, Tex.
53 Treatment of Compound Fractures. W. W. Spargo, Albuquerque.
54 Pellagra in Pecos Valley. C. F. Beeson, Roswell.

New Orleans Medical and Surgical Journal

April, LXV, No. 10, pp. 697-784

55 Control of Diphtheria. W. H. Seemann, New Orleans.
56 Nasal Diphtheria in Public Schools. E. Moss, New Orleans.
57 Heart in Diphtheria. J. B. Elliott, New Orleans.
58 Anaphylaxis: Report of Case. M. J. Magruder, New Orleans.
59 Diphtheria of Ear and Nasopharynx. W. Scheppegrell, New Orleans.
60 Corrective Plaster Jackets in Treatment of Scoliosis. E. S. Hatch, New Orleans.
61 Intravenous Ether Anesthesia: Report of Cases. E. L. Sanderson, Shreveport, La.
62 Cleft Palate. J. F. Oechsner, New Orleans.
63 Pancreatitis. W. T. Richards, New Orleans.
64 Vesical Calculi. L. Sexton, New Orleans.
65 Intestinal Obstruction. G. L. Stirling, Baton Rouge.

New York Medical Journal

May 3, XCVII, No. 18, pp. 905-956

66 Hematuria. V. C. Pedersen, New York.
67 Shoulder and Arm Paralysis of Poliomyelitis. B. Bartow, Buffalo.
68 Anomalies in Cardiac Rhythm. T. Howard, New York.
69 *Travels of a Nail. G. Rosenbaum, Philadelphia.
70 Paraurethrae. J. L. Herman, Philadelphia.
71 Fibromyoma Uteri. W. P. Healy, New York.
72 Carcinoma of Stomach: Its Early Diagnosis. J. V. O'Connor, Woonsocket, R. I.
73 Internal Treatment of Nephritic Diseases. H. Strauss, Berlin.
74 Chronic Nephritis. G. Parker, Burin North, Newfoundland.
75 *Edema of Glottis. G. K. Collier, Sonyea, N. Y.

69. **Travels of a Nail.**—A small and poorly nourished child, 2½ years of age, swallowed a long wire nail on December 16, 1912. Shortly after this he vomited and the vomitus was tinged with blood. The mother gave the baby purgatives and tried home remedies, but with no result. Two days later, after a dose of castor oil, the child suffered severe abdominal pain and became cyanotic for a short time. December 20 the child was referred to Rosenbaum. The temperature was 99 F., pulse 116 and respirations 28. No tenderness or rigidity of abdomen on palpation. Six skiagrams were taken, the first on December 20 and the last on December 29, the day the nail was passed from the rectum. All told, the nail was in the alimentary tract fourteen days. Four days it lodged in the stomach and six days were required to complete the journey through the small intestine, and the remaining four days for its passage through the large intestine. The child had daily evacuations during this period, and, while it was quite restless during its stay in the ward, it was in no sense ill. The temperature never rose above normal.

75. **Edema of Glottis.**—The unusual features of Collier's case are glottic edema occurring with epilepsy, and the rapidity of its course, two years.

Oklahoma State Medical Association Journal, Muskogee

April, V, No. 11, pp. 485-524

76 Unusual Cerebral Symptoms in Child of Ten Years. W. G. Little, Okmulgee.
77 Caisson Disease. B. H. Brown, Muskogee.
78 Associated Nervous Diseases of Women. D. M. Montgomery, Marlow.
79 Loss of Hearing in One Ear from Injury. J. H. Barnes, Enid.
80 Obstetric Surgery. T. B. Coulter, Chickasha.
81 The Throat and Its Value to General Practitioner. A. B. Leeds, Chickasha.

Ophthalmic Record, Chicago

April, XXII, No. 4, pp. 175-232

82 Needs of Eye, Ear, Nose and Throat Surgeon in General Hospitals. F. Allport, Chicago.
83 Method of Dealing with Capsule after Cataract Operations. D. F. Reeder, Ancon, C. Z.

Ophthalmology, Seattle, Wash.

April, IX, No. 3, pp. 321-478

84 Simplification of Operation of Krönlein. A. Magitot and M. Landrieu, Paris.
85 Wolfe Graft Used to Correct Total Ectropion of Upper Eyelid. N. H. Goodenow, Everett, Wash.
86 Altitudinal Hemianopsia, Unilateral and Bilateral. L. C. Peter, Philadelphia.
87 Large Incision in Cataract Extraction. E. F. Snydacker, Chicago.
88 Lacrimation. A. A. Bradburne, Manchester, Eng.

89 Case of Mumps with Interesting Ocular Complications. H. Worthington, Chicago.
90 Pseudoglioma in Children. F. Krauss, Philadelphia.
91 Accidental Tatooing of Cornea by Piece of Lead from Copying Pencil. S. H. Brown, Philadelphia.

Pennsylvania Medical Journal, Athens

April, XVI, No. 7, pp. 513-594

92 Dr. Benjamin Rush, Pioneer Investigator of Effects of Alcohol and Tobacco on Man. H. O. Marcy, Boston.
93 High Intestinal Obstruction, Postoperative Ileus and Acute Pancreatitis. J. E. Sweet, Philadelphia.
94 *Medical Aspects of Pulmonary Surgery. H. R. M. Landis, Philadelphia.
95 Surgical Aspects of those Diseases of Thorax which are Amenable to Surgical Intervention. S. Robinson, Boston.
96 Technic of Thoracic Operations. W. W. Babcock, Philadelphia.
97 *Intrathoracic Tumors. J. Sailer and R. G. Torrey, Philadelphia.
98 Diagnostic and Therapeutic Value of Needle Puncture of Maxillary Sinus. H. M. Goddard, Philadelphia.
99 Bilateral Pansinusitis; Operation; Thrombosis; Meningitis; Recovery. M. D. Ritchie, Pittsburgh.
100 Drainage of Accessory Sinuses in Atrophic Rhinitis. J. F. Culp, Harrisburg.
101 Treatment of Suppuration of Antrum of Highmore. E. B. Gleason, Philadelphia.
102 Exploratory Opening of Sphenoid Sinus. C. P. Grayson, Philadelphia.
103 Case of Injury to Eye. G. R. S. Corson, Pottsville.

94 and 97.—Abstracted in THE JOURNAL, Nov. 16, 1912, p. 1815.

Philippine Journal of Science, Manila

October, VII, No. 5, pp. 423-473

104 *Study of Polyneuritis Gallinarum. Degeneration of Nerve Fibers. E. B. Vedder and E. Clark.
105 Report of Pathologic Examinations for One Year from Surgical Clinic of Philippine General Hospital. P. K. Gilman and B. C. Crowell.

104. **Polyneuritis Gallinarum.**—In every one of the fifty-six fowls which had been fed by Vedder and Clark for thirty-five days or more on polished rice, changes indicative of degeneration (Marchi method) were seen in the fibers of the sciatic nerve, regardless of whether symptoms of neuritis had or had not manifested themselves before death. Advanced degeneration in the peripheral nerve fibers manifests itself by a change in both myelin sheath and in the axis cylinder. The myelin sheath breaks up into globules and droplets, which stain black in the Marchi solution—indicative of fatty degeneration. The axis cylinder breaks up into segments or disintegrates in all those fibers showing advanced degeneration in the medullary sheath. The degree of degeneration in the sciatic nerve corresponds closely with the extent of the paralysis of the legs. Advanced degeneration was observed in only 10 to 15 per cent. of the fibers of the sciatic nerve of fowls showing pronounced symptoms of leg paralysis. In the remaining fibers the change was not advanced. They could detect no difference in the degeneration in the sciatic and its peripheral branches either as regards extent or time of onset. Degeneration was observed in both dorsal and ventral nerve roots, being most pronounced in the latter. Degenerative changes in both axis cylinder and medullary sheath were seen in fibers of all columns of the thoracic spinal cord.

Changes were observed (Nissl method) in certain large cells of both ventral and dorsal horns of the gray substance of the lumbosacral cord. In the cells of both horns, the tigroid bodies were not visible, and the stainable material was collected at one side of the cell around the base of one of the processes. Cells were occasionally seen whose nuclei stained very poorly. Mitochondria were observed in the nerve cells of the lumbosacral cord, even though there was a pronounced alteration of the tigroid bodies. The mitochondria here were of similar appearance and almost or quite as numerous as in corresponding cells of the normal cord. In the medullary sheath of fibers of the sciatic nerve of normal fowls numerous small, bacilli-like rods, arranged radially around the axis cylinder, were made apparent by the various mitochondria methods. These structures are probably mitochondria. Fowls show alteration in the medullary sheath of the sciatic fibers after only seven days on a polished rice diet. In the sciatic fibers of fowls fed for seven days on polished rice alone, the rods are scarcely to be observed. Instead, the stainable material shows remarkable alterations and occurs in the form of irregular, branched and anastomosing masses. In fowls fed for a longer period, these masses show, in a certain percentage of the fibers, progressive changes which manifest themselves in the form of more definite skeins and segmentations and larger masses and globules of stainable material. In fibers showing marked degeneration by the Marchi method these occur as larger or smaller vesicular, oval globules and correspond to the black globules shown by the Marchi preparations.

When fowls are fed on polished rice and in addition given some protective substance, such as is contained in extract of rice polishings or in various foods, but in insufficient quantity to confer complete protection, the disease appears in its characteristic form and with all the evidences of nerve degeneration, but after a prolonged incubation period—forty-five to ninety days, or even after one year of such feeding (Eijkman). When fowls are fed on polished rice and in addition receive daily 10 grams of white bread or 5 c.c. of canned milk, they receive little or no protection from polyneuritis gallinarum. When fowls are fed on polished rice and in addition receive daily 10 grams of meat cooked or uncooked, 10 grams of potatoes cooked or uncooked, or 5 c.c. of fresh cow's milk, they receive partial protection as indicated by the prolongation of the incubation period. When fowls are fed on polished rice and in addition receive daily 10 grams of dried peas or 10 grams of peanuts, they receive complete protection for at least sixty days.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Brain, London

February, XXXV, No. 3, pp. 295-457

1 *Pedigree Showing Both Insanity and Complicated Eye Disease: Anticipation of Mental Disease in Successive Generations. E. J. Lidbetter and E. Nettleship.
2 *Case of Progressive Lenticular Degeneration. J. E. H. Sawyer.
3 *Case of Periodic Paralysis. H. W. Gardner.

1. **Pedigree Showing Insanity and Complicated Eye Disease.**—The pedigree which forms the basis of this paper shows an association between mental deficiency and ocular defects, partly developmental and partly morbid. Among the members of this family, who are not known to have had any defined mental or bodily disease, a large proportion have been recipients of poor law relief, showing that they were not well enough endowed mentally and physically to compete successfully in life. The mental deficiency in this family tends to appear at an earlier age in each succeeding generation (anticipation); but anticipation cannot be proved for the ocular defects. The pathologic changes are chiefly detachment of the retina, based on disease of the chorioid, but with iritis and secondary cataract in some cases. Both the mental and the ocular conditions are hereditary.

2. **Progressive Lenticular Degeneration.**—The particular points of interest in Sawyer's case are: The age of the patient (19) at the commencement of the symptoms. The disease has now been manifest for seventeen years, whereas in all the others there was a fatal termination within seven years. The tremors are always present, but vary in intensity from day to day, whereas in the recorded cases when they had developed they never seemed to diminish. The muscular rigidity does not appear to have been less on one day than another in any of the recorded cases. In this patient the rigidity never disappears, but it varies in intensity from day to day, and also while under examination the rigidity changes distinctly in different parts of the body. A limb which is at one time extremely rigid may at another become comparatively flaccid. There are no true contractures in this case. In all

the other cases these were such a marked symptom when the disease had been present even for a short time. There is no dysphagia in this patient, only a difficulty in mastication. There is no emaciation or weakness. The patient is not fat, but he is quite strong. The nervous symptoms present in this patient, according to Sawyer, leave no doubt that the lesion is situated bilaterally in the lenticular nucleus. He describes all the findings in detail.

3. **Periodic Paralysis.**—The patient, a boy, aged 17, told Gardner in the spring of 1907 that for the last two years he had been subject to attacks of complete loss of power in his arms and legs. The first attack occurred in August, 1905. It came without any warning. He woke up one morning and found that he was unable to move his head, arms and legs. His head ached and so did his back, arms and legs, and he felt weak and ill. The attack lasted all day. During it he was unable to pass water, and his club doctor was sent for, who drew it off with a catheter. Next morning he woke up feeling as well as ever and returned to work. The second attack was precisely similar, and occurred nine months later (May, 1906). The third attack occurred six months after the second. The fourth attack after an interval of another three months. The fifth attack after an interval of another two months. The sixth attack after an interval of one month only. An interval of two weeks only had intervened between the sixth attack and the present one—the seventh. Not only had the attacks come more and more frequently, but they were also more prolonged; the sixth attack began on a Sunday morning and lasted three whole days.

On Wednesday morning when he woke up he found himself quite well once again. He had never had any illness, had not suffered from infantile convulsions; he had been a strong healthy boy, fairly intelligent, leaving school in the fifth standard, never nervous or delicate in any way. He had, however, been subject to "sick headaches" for as long as he could remember, generally at intervals of two or three months. His head used to feel heavy; he used to see "zigzag lines and round circles," and the attacks would end in vomiting, relieving the headache. Then he would sleep for two or three hours, and wake up feeling quite well. Since the attacks of paralysis began these sick headaches had ceased.

Patient belongs to a strong, healthy family by no means neurotic. His father, mother, five brothers and three sisters are alive and well and strong. One brother died in infancy. His mother and one brother suffer from occasional "bilious headaches." There is no history of any similar attacks of paralysis having occurred in his family, either on the father's side or the mother's, nor is there any history of epilepsy or any other nervous disease. Gardner came to the conclusion that the attacks of periodic paralysis were due to auto-intoxication, the presence of the toxins being due to some congenital defect in metabolism.

The treatment was: 1. The patient was to give up drinking beer altogether, and to avoid all rich food; and he was to drink large quantities of water. 2. To take magnesium sulphate, ʒi in half a pint of hot water on rising every morning. 3. To take 2-grain pills of calomel, once a fortnight at bed time, followed by Epsom salts in the morning. 4. To take tincturae digitalis ♏ iv; potassii acetatis, gr. xx; syrupi ʒss; aquae menthae piperitae ʒi. ter die. 5. To take caffeinae citratis, gr. viiss; potassii bromidi, gr. x; acidi hydrobromi. dil., ♏ xv; syrupi ʒss; aquae chloratae ʒss., in a tumblerful of water whenever any warning symptoms of an attack make their appearance.

The success of treatment was very great. The attacks which had been getting more and more frequent, and threatened to incapacitate the patient, at once ceased. It was two years before he had another attack; once or twice warning symptoms occurred, but a dose of the caffein mixture proved sufficient to avert it. Then came the attack after a hard game of football. The patient was told to take his calomel pills and a dose of his caffein mixture, and to eat a light supper and drink no beer and much water after a football match in the future. As long as he did this he played football matches with impunity. Then the patient discontinued all treatment and drank beer again. The attacks recurred, and threatened to become more frequent.

British Medical Journal, London

April 19, I, No. 2729, pp. 805-864

4 Malingering, Valetudinarianism and Their Prevention. B. Bramwell.
5 Malingering. C. J. Bond.
6 Plea for Medical Referees Versus Inspectors. J. Collie.
7 Studies on Beriberi. C. Funk.
8 Alimentary Toxemia: Cutaneous Indications of Alimentary Toxemia. J. Galloway.
9 Chronic Intestinal Stasis. A. F. Hertz.
10 Bacteriologic Evidence of Intestinal Intoxication. J. C. G. Ledingham.

Dublin Journal of Medical Science

April, III, No. 496, pp. 241-320

11 *Celiac Affection. H. C. Drury.
12 *Tuberculin Treatment of Pulmonary Tuberculosis. G. B. Dixon.
13 Three Cases of Tuberculous Disease of Lower End of Femur, Illustrating Points in Pathology and Treatment. W. I. de C. Wheeler.

11. **Celiac Affection.**—Drury cites a case of what Gee has described as an intestinal disorder, most commonly met with in children between the ages of 1 and 5, characterized by the occurrence of pale, loose stools, not unlike gruel or oatmeal porridge. They are bulky, not watery, yeasty, frothy and extremely offensive. The affection has received various names, such as diarrhea alba or diarrhea chylosa. It is not associated with tuberculosis or other hereditary disease. It begins insidiously, and there are progressive wasting, weakness and pallor. The belly becomes doughy and inelastic. There is often flatulency. Fever is usually absent. The disease is lingering, and a fatal termination is common. So far nothing is known of the pathology of the disease. Ulceration of the intestine has been met with, but it is not constant. The treatment is—stop all milk and carbohydrate food, and feed entirely on raw meat and meat extracts. Within two or three days of the adoption of this line of treatment the stools begin to assume the ordinary color; they are smaller in quantity and number, but even more offensive than before. This, however, gradually subsides. The abdomen, too, becomes less and less distended, and finally quite normal in appearance. The chief difficulty seems to be to get the patient gradually on to ordinary diet and to know when to begin to try to do this. In Drury's case the patient seemed to remain *in statu quo* as long as she was on the purely meat diet, but when Drury began to slowly increase her carbohydrate food she gradually began to enliven up and very slowly to put on weight. She became quite well.

12. **Tuberculin in Lung Tuberculosis.**—Dixon's discussion of this subject emphasizes the fact that to obtain the best results from tuberculin injections every attempt should be made to reach the maximal dose of the preparation which is being used, and if this is done it will usually be shown that the patient's immunity has been raised and that he is in a much better position than he previously was to withstand fresh infection, as evidenced by the absence of relapses; for how long this high level of immunity can be maintained is a point which it is very difficult to determine. After a full course of tuberculin injections, any recurrence of symptoms or any increase in or reappearance of physical signs should be an immediate indication for the continuance of injections. Dixon points out that if this course were more universally adopted many patients would be saved from those acute phases which so frequently occur in the course of pulmonary tuberculosis, and one of which so frequently terminates fatally. Small doses of tuberculin administered for a short period of time are usually worse than useless unless such a course of treatment is secondary to a previous full course, or unless it is to be repeated. Inasmuch as tuberculin is powerless to alter gross lesions in the lungs, so in marked cases of the disease one should not judge results by the change produced in the physical signs.

Lancet, London

April 5, I, No. 4675, pp. 937-1006

14 Genital Functions of Ductless Glands in Female. W. B. Bell.
15 Intrathoracic Aneurysm. F. de H. Hall.
16 Non-Parasitic Cysts of Liver. S. Boyd.

17 Pathology of Tuberculosis in Infancy and Childhood. C. P. Lapage and W. Mair.
18 Acute Tuberculous Pneumonia: Recovery. S. N. Galbraith.
19 Technic of Excision of Cervical Ribs. A. S. B. Bankart.
20 Epithelioma of Auricle and Cervical Glands; Removal of Auricle and Glands. N. Patterson.

April 19, No. 4677, pp. 1075-1146

21 *Operative Treatment of Malignant Disease of Mouth and Pharynx. W. Trotter.
22 Morbid Anatomy of Periodontal Disease. J. F. Colyer.
23 *Abdominal Pain in Infants. E. Prichard.
24 Extradural Abscess at Apex of Petrous Bone. H. F. Tod.
25 Pneumococcal Abscess of Lung in Children. L. E. Barrington-Ward.
26 Periosteal Sarcoma of Fibula with Unusually Rapid Though Typical Complications. F. J. Wadham and E. L. Horsburgh.
27 *Use of Sugar in Heart Disease. S. E. Denyer.

21. **Malignant Disease of Mouth and Pharynx.**—Trotter holds that more mistakes are made in the direction of pronouncing tumors inoperable than in attempting operations which cannot be completed. The reason for this, he believes, is that in advanced gland cases of malignant disease of mouth and pharynx the principal mass is usually under the upper end of the sternomastoid and fixed to it near its insertion. This gives the erroneous impression that the growth is fixed to the spine. Glands beneath the muscle are also likely to appear ill-defined and diffuse when they are in fact not so. When glands not under the muscle are indefinite and accompanied by brawniness of the skin and edema it is generally quite useless to operate. Trotter regards it as being very remarkable how the common and internal carotids and the vagus escape involvement in gland masses until very late. Such masses tend to spread backward and involve the muscles on the floor of the posterior triangle long before they attack the common carotid. When the common carotid and vagus are involved it is doubtful whether the operation should be carried out, and much would depend on the kind of primary growth and the condition of the patient. Removal of these two structures is a serious addition to the danger of the operation in itself, but it implies such extensive disease that cure is practically impossible. The limits of operability, then, lie less in technical difficulties than in the uselessness of the operation.

23. **Abdominal Pain in Infants.**—In quite young infants, Pritchard says, there is little to distinguish the pain due to abdominal disturbance from pain due to other causes. In this, as in other painful conditions, the legs will be drawn up, the arms flexed, and the hands probably clenched; the *recti abdominales* will be tense and the abdomen hard. There may be areas of hyperesthesia, but they are difficult to locate, as the infant may be more or less tender all over. With abdominal pain, however, the baby usually appears to be comforted by gently rubbing the abdomen or when laid face downwards on a pillow. Heat applied to the abdomen usually gives relief. The causes of abdominal pain in their approximate order of frequency are given as follows: 1. Dysperistalsis of the intestines, including enterospasm caused by irritation, obstruction, or nervous incoordination. 2. Disturbances of the motor functions of the stomach, including pyloric spasm, hour-glass contraction, spasm of the cardiac sphincter from wind, food or other causes. 3. Incoordination of the motor functions of the bladder, spasm of the sphincter, vesicae, etc. 4. Referred pain from the thoracic cavity, pneumonia, pleurisy, empyema, etc. 5. Renal colic. 6. Spinal caries and osteomyelitis. 7. Peritonitis, appendicitis, etc. The only way, Trotter concludes, to appreciate the illusive symptoms of the impressionist baby is to live with it, or even to sleep with it, but pain must not be regarded as an unmixed evil; it is often a most valuable educational medium.

27. **Sugar in Heart Disease.**—Denyer's patient, aged 77 years, had an irregularity of the pulse for some years. On Nov. 8, 1912, she had a bad heart attack, with rapid, irregular, feeble pulse, cyanosis, and attacks of paroxysmal breathing, which occurred about 5 or 6 a. m. There was no edema at this time, or at any time during the illness. On November 14 the patient seemed to be dying. Denyer ordered some lumps of ordinary white suger to be given in milk, and added some syrup to her medicine, telling them to give 4 ounces of sugar during the night. In the morning the patient was very weak, but less cyanosed and with a stronger, slower pulse. Digitalis had been omitted as well as digitalin, as these had no effect on the heart or pulse. Four ounces of sugar were ordered during the ensuing twelve hours, and after that it was continued in smaller quantities for some weeks. The patient made a slow but steady improvement, the breathing attacks getting less frequent and the pulse stronger and more regular. Her general weakness was very great and she gained strength very slowly. By the end of February she was able to go out into the garden for a few minutes, and to walk up and down stairs.

Bulletin de l'Académie de Médecine, Paris

April 1, LXXVII, No. 12, pp. 229-266

28 Spirochetes Found in General Paralysis. (Présence du treponema pallidum dans un cas de méningite syphilitique associée à la paralysie générale et dans la paralysie générale.) G. Marinesco and J. Minea.
29 From the Seat of War. (Des enseignements de la guerre des Balkans. 1912.) M. Delorme. See Paris Letter, p. 1311.
30 Tobacco Angina Pectoris. (L'angine de poitrine tabagique.) C. Flessinger. See Paris Letter, p. 1473.

Presse Médicale, Paris

April 9, XXI, No. 29, pp. 285-292

31 Fracture of the Ulna with Dislocation of the Head of the Radius. E. Kirmisson.
32 Technic for Cauterization with Carbon Dioxid Snow. (La cautérisation par le froid.) R. Burnier.

Revue de Chirurgie, Paris

April, XXXIII, No. 4, pp. 429-632

33 *Recent Fracture of the Heel Bone. (Fractures du calcanéum.) P. Soubeyran and A. Rives.
34 *Bleeding Polyps in the Rectum. (Les hémorragies des polypes du rectum.) P. Mocquot.
35 *Injury of Stomach from Swallowed Corrosives. (Les brulures de l'estomac consécutives à l'ingestion d'acides.) X. Delore and L. Arnaud.
36 Modern Technic for Goiter Operations. H. Alamartine.
37 Reflex Pain in the Epigastrium with Appendicitis. S. Solieri.
38 *Primary Melanoma in the Rectum. (Les tumeurs mélaniques primitives du rectum.) A. Chalier and P. Bonnet. Commenced in preceding volume.

33. **Fracture of the Calcaneum.**—Soubeyran and Rives review the various types of fracture of the heel bone, the special symptoms of each and the special technic to apply in treatment of each form. The anterior and middle segments were involved in sixty-nine of the 137 cases they have compiled. In ninety-two cases in which the sex was mentioned seventy-nine of the patients were males. In only three cases were the patients under 20 years of age. Fracture of the heel bone may be regarded as an occupational accident in masons, roofers and carpenters. The diagnosis is seldom correctly made without roentgenoscopy. Ehret states that the fracture was diagnosed in only three of the forty-seven cases he had collected. Failure to diagnose the fracture may lead to serious trouble, persisting pain and functional incapacity. The main thing is not to treat the fracture as a sprain or contusion; in the mild cases the symptoms may be very misleading, but treatment as for a sprain although apparently curing all trouble is yet only transient in its effects, and the removal of the cause will have to be undertaken later. Even with correct treatment, consolidation does not occur under sixty days. They warn expressly against use of the foot before this as too early use may cause serious and permanent functional disturbance. The fracture generally occurs from a fall landing on the feet. Sometimes there is not much pain or impotence at first but both increase in the following two or three hours until the patient can no longer keep up and about.

34. **Bleeding Polyps in the Rectum.**—Mocquot compares a personal case observed with the literature on the subject, all data tending to show that hemorrhage with a pedunculated adenoma in the rectum comes from the tumor itself and not from the mucosa around. The hemorrhage occurs when the polyp becomes twisted on its pedicle by the passing masses of stools, and the polyp bleeds on the surface and in its interior. His patient was a child of 12 and the large polyp grew from the wall of the rectum just above the anus.

35. **Injury of Stomach from Corrosive Acids.**—Delore and Arnaud describe three cases of corrosive lesions in the stomach without much injury of the esophagus. The patients were from 24 to 52 years old and the cases show the different types of lesions that may follow drinking a corrosive substance. One woman had swallowed half a glass of hydrochloric acid; she did not vomit and it was impossible to introduce the stomach pump. The stomach was opened thirty-six hours later and the patient died the same night. The walls of the stomach were black, as if charred by fire, down to the pylorus, the duodenum beyond being absolutely intact. The pancreas showed intense congestion in the body and tail. The patient had not taken any fluids after the acid so that it had not been diluted. In the second case a man drank half a glass of sulphuric acid by mistake. He followed it immediately with two glasses of lemonade, vomited freely fifteen minutes later, and by the end of the hour drank some Vichy water and milk. During the next few days he vomited occasionally and there was some ulceration in the pharynx. After two weeks he began to vomit more frequently and lost flesh. Gastro-enterostomy was then done; a patch of cicatricial tissue was found in the antrum and all disturbances disappeared after the gastro-enterostomy. The third patient drank a glass of nitric acid which scorched the esophagus and stomach as she drank it and also when she vomited some of it up ten minutes later. Ipecac was given and copious vomiting followed, with blood in the vomit. Later she was given 40 gm. of calcined magnesia dissolved in a liter of water which she sipped from time to time. No attempt was made to rinse out the stomach on account of the tendency to hematemesis and the extreme depression. The vomiting gradually grew less frequent and the patient felt better but every attempt to eat or drink brought on the vomiting anew. She could keep down nothing except a suspension of bismuth; this suppressed the pains but the intolerance of the stomach increased as the diffuse cicatricial lesions developed. Gastro-enterostomy gave great relief but the result was less favorable than in the second patient as the lesions were more diffuse. It is possible that jejunostomy, leaving the stomach absolutely at rest, might have given better results.

The lesions in these cases of corrosion are always most intense in the lowest part of the stomach, where the fluid accumulates. An immediate operation permits the organ to be emptied and rinsed out and when this is impossible by the natural route, the operation might be considered. Jejunostomy done early is to the stomach in these conditions what gastrostomy is when the esophagus is the seat of the lesion; it checks the development of cicatricial changes. In case of diffuse cicatricial gastritis, like that presented by the third patient, operative treatment is indispensable. Stenosis of the esophagus or pylorus may develop long afterward. This suggests the importance of inquiring as to a history of possible injury of this kind from a caustic fluid when a patient applies for treatment for stenosis of the pylorus. On account of the possibility of stricture developing in the esophagus, it may be wise to fasten the stomach to the wall in concluding a gastro-enterostomy. This would permit feeding the patient through a gastrostomy with very little trouble in case this became necessary. Although severe necrosis of the gastric tissues developing at once is still almost inevitably fatal, yet the cases in which the destructive process is less acute and entails merely cicatricial lesions have benefited by the progress of gastro-intestinal surgery.

38. **Primary Melanoma in the Rectum.**—Chalier and Bonnet here conclude their long study of this subject based on sixty-four cases with operative treatment in forty-four. Of the thirty-nine patients who survived the operation the later history is known in twenty-nine cases. Recurrence with or without metastasis followed in 58.62 per cent.; the intervals ranged from a few weeks or months to fifteen, eighteen or twenty-seven months. The recurrence is generally local or in the inguinal glands. Tuffier operated on a recurrence in both rectum and inguinal glands nineteen months after the first operation and the patient survived eight months. Drenkhahn has reported a survival of two and a half years after the operation for recurrence.

Revue Mens. de Gynécologie, d'Obstétrique et de Pédiatrie, Paris

March, VIII, No. 3, pp. 149-220

39 Incomplete Forms of Syphilis in Pregnant Women. (Quelques cas de syphilis fruste observés chez des femmes enceintes.) G. Calderini.
40 Vulvovaginal Thrombi and Hematomas. A. Van Couwenberghe.
41 Salvarsan in Puerperal Fever; Four Cases. G. Bleynie.

Beiträge zur Klinik der Tuberkulose, Würzburg

XXVI, No. 3, pp. 245-333. Last indexed April 19, p. 1267

42 *Poncet's Inflammatory Tuberculosis. F. v. Gebhardt.
43 A Refractory Phase in the Tuberculin Reaction. K. Vorpahl.
44 Diaphragm Hernia, Probably Traumatic, in an Adult Consumptive. L. Melchior.
45 *Importance of Albumin in Sputum for Early Diagnosis of Tuberculosis. (Ueber den Nachweis von gerinnbarem Eiweiss im Sputum und seine Bedeutung.) J. Kauffmann.
46 Technic for Artificial Pneumothorax. S. Bang.
47 *Necropsy after Artificial Pneumothorax; Three Cases. (Drei Todesfälle mit Obduktion nach Behandlung von Lungentuberkulose mit künstlichem Pneumothorax.) C. Sundberg.

42. **Inflammatory Tuberculosis.**—Gebhardt reports three cases which seem to sustain Poncet's views in regard to the participation of tuberculous infection in a certain proportion of cases of joint trouble. In one case there was at first merely arthralgia, in the second a subacute process, both passing into a chronic stage entailing ankylosis; in the third case, the tuberculous rheumatism led to polysynovitis. The patients were men from 27 to 39 years old and the joint affections were followed by pulmonary tuberculosis in the first two cases while a pulmonary process had preexisted in the third case. The joint trouble developed in the course of tuberculin treatment in this latter patient; an old tuberculous process in the back of the left hand became mobilized under the influence of the tuberculin treatment, and spread in the form of tuberculous rheumatism, followed by chronic polysynovitis. A guinea-pig inoculated with fluid from a synovial process died the fifth week of chronic tuberculosis as also another, the third week, inoculated with pus from the hand process.

45. **Diagnostic Import of Albumin in the Sputum.**—Kauffmann states that tests for albumin in the sputum gave constantly positive findings in his 108 tuberculous patients examined. The test is extremely simple and can be applied in a few minutes at the bedside. Albumin does not appear in the sputum in chronic bronchitis, but it occurs in pneumonia, congestion catarrh and fetid bronchitis. The finding of albumin in the sputum instructively confirms the positive evidence of the skin and subcutaneous tuberculin reactions; it indicates an active tuberculous focus and locates it in the lung. As the tuberculous focus heals, the albumin disappears from the sputum. In pneumonia, it disappears from the sputum after the crisis. If it is found later, this indicates the development of new foci or empyema or that there is existing pulmonary tuberculosis. The technic has been repeatedly described in THE JOURNAL. The sputum is shaken up with a little acetic acid which precipitates out the mucin and nucleo-albumin. The filtrate is then tested for albumin by boiling or with potassium cyanid. Kauffmann applied both tests, adding a few drops of a concentrated salt solution to the filtrate and boiling, or a few drops of the cyanid were added to the filtrate. In dubious cases the cyanid solution can be poured on the filtrate; a whitish gray ring forms at the zone of contact.

The sputum must come from the lower air passages and not from the throat. The importance of this test is most marked in the incipient stages of pulmonary tuberculosis. The findings may be negative until a subcutaneous injection of tuberculin induces a focal reaction. In one case the findings were negative until the dose of tuberculin was doubled, when the temperature rose but there was no apparent focal reaction and yet albumin appeared in the sputum and the later course of the case confirmed the positive findings. In thirty-seven of his cases the tuberculosis was in the earliest phase and no tubercle bacilli were found on daily examination but the albumin reaction was constantly positive. Geerard declares that a negative skin tuberculin reaction and positive albumin reac-

tion are signs of a non-tuberculous pulmonary affection; while a positive skin reaction and negative albumin reaction signify latent tuberculosis. When both reactions are positive, an active tuberculous process in the lung may be assumed. The albumin occurs in the sputum in a number of other affections, in heart and kidney disease and in pulmonary edema. Its great value is that it enables pulmonary tuberculosis to be differentiated from bronchitis. In two of the cases of chronic bronchitis reported the albumin test had been constantly negative, and necropsy failed to reveal any trace of a tuberculous focus.

47. **Artificial Pneumothorax.**—Sundberg gives the necropsy findings in three fatal mishaps after pneumothorax had been induced with the usual technic. He states that B. Hansen collected last May from the literature thirty-one cases of serious symptoms, with a fatal termination in eight cases. In Sundberg's first case a woman of 28 developed immediately hemiplegia and unconsciousness, and died thirty-six hours after the eighth injection by the usual technic. The collapse occurred before the needle had been introduced into the cannula and before the faucet had been turned to admit the gas. The second patient was a man of 49 who died from dyspnea three hours after the twenty-second injection. The symptoms of shock developed in two or three minutes and although the pulse kept good yet the dyspnea progressed, the mind constantly clear to the end. The third patient was a young woman who died a few minutes after the sixth insufflation. The necropsy findings confirmed in the first case the assumption of spasmodic contracture of vessels with multiple thrombosis and multiple softening of the cerebral cortex—all evidently reflex phenomena. The second case was an example of reflex spasm of the larynx. The third patient presented findings indicating vasomotor disturbances. Nothing was found in any of the three cases to suggest gas embolism as the cause of the disturbances.

Berliner klinische Wochenschrift

April 7, I, No. 14, pp. 621-668

48 *Treatment of Gastro-Intestinal Hemorrhage. (Magen- und Darmblutungen.) I. Boas.
49 Bile Peritonitis. (Gibt es eine gallige Peritonitis ohne Perforation der Gallenwege?) C. Nauwerck and Lübke.
50 Treatment of Vincent's Angina. J. Citron.
51 Bolus Alba for Sterilization of the Hands. (Ueber die Händedesinfektion mit Bolusseife und paste nach Liermann.) K. Kutscher.
52 *Serodiagnosis of Cancer. (Erfahrungen mit der Abderhalden-'schen Fermentreaktion beim Carcinom.) E. Frank and F. Heimann.
53 Etiology of Rabies. (Tollwut.) F. Proescher (Pittsburgh).
54 *Preservation of Anatomic Specimens in Sugar Solutions. (Konservierung von Dauerpräparaten in konzentrierter Zuckerlösung.) G. Magnus.
55 *Variations in Chicken Sarcoma Caused by Filtrable Agent. (Beobachtungen an einem Hühnersarkom und seiner filtrierbaren Ursache.) P. Rous and J. B. Murphy.
56 Cisterns and Malaria at Jerusalem. (Das Cisternenproblem bei der Bekämpfung der Malaria in Jerusalem. W. Brunn and Goldberg.

48. **Hemorrhage in Gastro-Intestinal Tract.**—Boas remarks that hemorrhage in the alimentary canal is one of the few fields still entirely in the hands of the internists and that the last two decades have brought decided progress in the line of warding off serious hemorrhages in the stomach or intestines by prophylactic measures based on the discovery of invisible blood in the stomach content or stools. Experience has demonstrated that no serious gastro-intestinal hemorrhage occurs without a preceding warning of occult bleeding through weeks, months or even years. This prophylaxis should be instituted for all forms of a local hemorrhagic tendency, from the esophagus to the rectum, stasis hemorrhages and hemorrhagic infarcts as well as the bleeding from ulcerating processes. The premonitory stage of occult bleeding may escape recognition, but Boas has found it in 94.5 per cent. of his gastric cancer cases and Zöppritz in the same proportion. Occult bleeding from a gastric or duodenal ulcer should receive the same treatment as if it were a severe hemorrhage. The patient must be kept in bed and on a milk diet (3 or 4 liters) with Carlsbad Mühlbrunnen water, with or without salt, until three or four days elapse without positive findings under the most careful tests for occult bleeding. The invisible hemorrhage may last for only a few days or may be evident for several weeks, but he never permits a patient out of bed or allows anything beyond milk until the last traces of blood have entirely vanished and for a period of three or four days. Visible hemorrhage occurs with gastric cancer in from 12 (Lebert) to 50 (Rosenheim) per cent. of all cases. Boas found it in 36 per cent. of his 100 patients with gastric carcinoma. With cancer, the hemorrhage is only exceptionally of an acute, threatening character, but it is liable to persist indefinitely, and consequently the diet should consist mainly of fluid food and eggs, when operative treatment is impossible.

When a gastric ulcer heals the predisposition still remains, and the patient must be kept under constant medical supervision. Recurrence should be suspected at once if pain returns and the stools show much change in color. In case of manifest hemorrhage in the gastro-intestinal tract, the liver and spleen should not be overlooked in examining the patient. He has had cases of gastro-intestinal hemorrhage in young people which seemed to come unmistakably from a gastric ulcer and yet the enlargement of the liver or spleen suggested a possible syphilitic origin for the trouble, the Wassermann test elicited a positive reaction, and specific treatment promptly restored conditions to clinically normal. In treatment of severe hemorrhage the danger from doing without food is not to be considered in comparison with the danger of bleeding to death. No food should be allowed except minute regular amounts of cold tea, ice-cold milk or egg-white jelly. Boas agrees with those who say that nutrient enemas feed the imagination more than they feed the body, but proctoclysis is of extreme importance. One liter thus given, a drop at a time, in the course of twenty-four hours is generally enough. The addition of fifteen drops of 1 per thousand epinephrin solution enhances the tonic effect of the proctoclysis. An ice-bag on the abdomen aids in arresting the hemorrhage, and is also useful to keep the patient still. Gelatin has not fulfilled its promise as a hemostatic but still it should never be omitted in severe cases of internal hemorrhage; the same applies also to rectal injections of calcium chlorid. He has never witnessed appreciable benefit from epinephrin taken internally, and neither has Ewald. As a last resort, rinse out the stomach with ice water; Kehr has recently added his endorsement of this measure. It is worth a trial when palpation shows that the stomach is full of clots and these keep up an irritation.

The behavior of the pulse teaches whether the danger of hemorrhage is still impending; a weak pulse and defective filling of the arteries shows that we are far from having conquered the tendency to hemorrhage. The finding of blood in the stools does not indicate whether it is of old or recent origin. In case of doubt it is better to exercise the greatest caution for the following week, especially in regard to diet and repose. The lower the abdominal hemorrhage the more amenable it is to our measures; the lower the site the less chance of serious acute bleeding. In regard to hemorrhoidal hemorrhage, great progress has been realized in the systematic use of local injections of calcium chlorid. This does not cure the hemorrhoids themselves, but there is nothing to hinder resuming this local treatment for a few weeks if the hemorrhoids begin to bleed again. He warns that it is not always easy to get a good quality of calcium chlorid. It should always be prescribed as calcium chloratum, cristallisatum, adding the chemical formula $CaCl_2$. These injections, done properly and systematically, generally have such a prompt action that for years he has not recommended operative or non-operative treatment of hemorrhoids for bleeding alone. Only when, besides the recurring hemorrhages, the size and prolapse of the hemorrhoids are very annoying, does he advise their removal. The treatment of gastro-intestinal hemorrhage, he remarks in conclusion, is extremely important and even a life saving measure, but this is only the first step. To remove the cause is the main thing, and often this is far more difficult.

52. **Abderhalden's Biologic Test for Cancer.**—Frank and Heimann obtained a positive reaction in fifty-three of fifty-four cancer patients, that is, in 98.2 per cent., while in twenty normal persons, 95 per cent. were negative. The next ques-

tion is to determine the behavior of the reaction in other diseases, syphilis, acute infections, exophthalmic goiter, etc.; also whether the test can be advantageously modified and whether it occurs with incipient cancer.

54. **Preservation of Anatomic Preparations in Strong Sugar Solutions.**—Magnus has been preserving specimens in a thick solution of sugar, such as fruit is preserved in, and he extols the advantages of this simple, inexpensive and convenient method. The results were extremely satisfactory even in regard to retention of colors when the jar had been exposed to the sunlight for six weeks. The tissues do not become stiff and brittle but cut with exceptional ease for microscopic examination. He first kept the specimens for from six to twelve hours in the usual formaldehyd solution and then twelve to twenty-four hours in 50 per cent. alcohol, before transferring to the oversaturated sugar solution. Only enough water was added to ordinary beet sugar to dissolve most of it, leaving still a little sugar at the bottom of the jar.

55. Compare with articles in the *Journal Exper. Med.* in January and April issues, 1913.

Correspondenz-Blatt für Schweizer Aerzte, Basel

March 29, XLIII, No. 13, pp. 385-416

57 Traumatic Enophthalmus. A. Dutoit.

April 12, No. 15, pp. 449-480

58 Special Advantages of Therapeutic Cataphoresis for Infectious Corneal Processes. (Erfahrungen mit Iontophorese.) F. Stocker. Commenced in No. 14.

59 Instantaneous Roentgenography from the Medical Standpoint. (Medizinische Bedeutung der Röntgen-Momentaufnahme.) J. Schwenter.

Medizinische Klinik, Berlin

April 6, IX, No. 14, pp. 523-566

60 *Diagnosis of Duodenal Ulcer. E. Allard.
61 Salvarsan and the Nervous System. E. Mattauschek.
62 Bile Hernia. (Cholocele—Gallenbruch.) E. Levin.
63 *Acute Addison's Disease. A. Lippmann.
64 Artificial Pneumothorax. (Ueber Lungenkollapstherapie mit bes. Berücksichtigung des künstlichen Pneumothorax.) A. Scherer.
65 Benzol in Treatment of Myeloid Leukemia. H. Reibmayr.
66 Rupture of Spleen from Slight Trauma in Typhoid. (Fall von Milzruptur durch leichtes Trauma bei Typhus als Unfallfolge.) S. Ishioka.
67 Localization of Acute Gout in the Larynx. W. Buss.
68 Acute Lead Poisoning. (Zur Klinik und Toxikologie der akuten Bleivergiftung.) A. v. Decastello and A. Oszacki.

60. **Diagnosis of Duodenal Ulcer.**—Allard does not approve of the "American plan of doing an exploratory laparotomy on suspicion of duodenal ulcer," and yet he admits that the characteristic symptoms of duodenal ulcer may be encountered with a gastric ulcer alone and that a duodenal ulcer may run its course without any chronic symptoms. He has found the test for occult blood an important aid, especially when preceded by an oil test breakfast. This induces a reflux of duodenum contents into the stomach and in case of a duodenal ulcer blood may then be found in the stomach content when otherwise it is constantly free from blood. He cites three cases to show the instructive findings under these conditions. In one case the admixture of blood in the stomach content after the oil test breakfast was the only sign of the duodenal ulcer.

63. **Acute Addison's Disease.**—The previously healthy young sailor suddenly developed typical Addison's disease, terminating fatally the eighteenth day. First the blood-pressure began to fall, then came intense weakness, then signs of intoxication, and finally the pigmentation. Epinephrin was given in large doses subcutaneously and this tided the patient along, evidently temporarily prolonging life. Both adrenals were found in total cheesy degeneration but the solar ganglion was intact; one accessory adrenal showed considerable hypertrophy.

Münchener medizinische Wochenschrift

April 1, LX, No. 13, pp. 681-736

69 *Serodiagnosis of Pregnancy. (Erfahrungen mit der Abderhaldenschen Schwangerschaftsreaktion—Dialysierverfahren u. Ninhydrinreaktion.) H. Schlimper and J. Hendry. (Die Schwangerschaftsdiagnose mittelst der optischen Methode und des Dialysierverfahrens.) R. Freund and C. Brahm.
70 Dependence of Disturbances in Experimental Diabetes on the Concentration of the Laving Fluid. (Ueber die Abhängigkeit experimentell-diabetischer Störungen von der Kationenmischung.) Weselko and O. Loewi.
71 Arthrodesis of Hip Joint. (Ueber die Arthrodese des Hüftgelenkes.) O. Vulpius.
72 Technic for Roentgenography. (Versuche über die harten Röntgenstrahlen—mit Berücksichtigung der Tiefenbestrahlung.) F. Dessauer.
73 Rubidium in Adelholz Waters. M. Emmerich.
74 The History of Serodiagnosis of Pregnancy. (Zur Geschichte der Serodiagnostik der Schwangerschaft.) R. Freund, E. Abderhalden and P. Lindig.

April 8, No. 14, pp. 737-792

75 *Spirochetes in Central Nervous System in Progressive Paralysis and Tabes. H. Noguchi (New York).
76 Peruvian Verruga. M. Mayer, H. Rocha-Lima and H. Werner.
77 Polariscope Findings in Cataracts. (Ueber doppeltbrechende Myeline in Katarakten.) M. Hoffmann.
78 *Congenital Tuberculosis. (Ueber angeborene Tuberkulose.) F. Harbitz.
79 Roentgenoscopy of the Appendix. (Die röntgenologische Darstellung des Processus vermiformis.) F. M. Groedel.
80 *Mongoloid Idiocy. H. J. W. Kellner.
81 *Cell Inclusions in Scarlet Fever. (Diagnostische Bedeutung der Döhleschen Leukozyteneinschlüsse bei Scharlach.) J. Schwenke.
82 Acromegaly Developing after Hysterectomy at 38. (Fall von Akromegalie nach Kastration bei einer erwachsenen Frau.) K. Goldstein.
83 *Pylorospasm and Gastric Ulcer. A. Neudörfer.
84 *Consanguineous Marriages. (Hat die Blutsverwandtschaft der Eheleute einen schädlichen Einfluss auf die Gesundheit der Nachkommen?) F. Kannglesser.
85 Orthostatic Albuminuria in the Tuberculous. J. Sturm.
86 Serodiagnosis of Pregnancy and Cancer. (Ueber Serumfermentwirkungen bei Schwangeren und Tumorkranken.) E. Abderhalden and R. Freund.

69. **Serodiagnosis of Pregnancy.**—Schlimpert and Hendry applied Abderhalden's biologic test for pregnancy soon after its publication, and here report the findings in 316 cases. At first they obtained contradictory findings, even when instructed by Abderhalden himself in the technic. At last they discovered that the hydrant water used (Freiburg) was the source of the error, and since they have eliminated this, their findings have confirmed Abderhalden's statements in every particular, as they followed his minute directions recently published in the *München. med. Wchnschr.*, 1912, LIX., 1939. Their last series of seventy-nine cases are thus the ones on which they base their conclusions. Not a single failure was encountered in the seventy-nine cases. The reaction is strictly specific and they proclaim it as the greatest progress yet made in the investigation of the metabolic processes which accompany pregnancy. The importance is obvious of a test which will reveal tubal pregnancy, differentiate between myoma and pregnancy, and disclose a pregnancy in its incipiency.

Freund and Brahm report their findings on application of both the optic method and the dialysis method. The findings were sustained by the clinical aspect of the case in 72.4 per cent. of the 134 cases in which the optic method was applied, and in 66.7 per cent. of the ninety-nine cases with the dialysis test. The fresher the serum, the better the chances for accuracy in the test. In the ninety-two cases in which both methods were applied, the findings harmonized in sixty-one instances, including forty-three positive and eighteen negative cases. In thirty-one cases the findings were contradictory. They remark that neither method is able to determine beyond possibility of a doubt the existence of a pregnancy, yet the scientific importance of the principles of the reaction involved is still very great. (For the technic of Abderhalden's reaction see editorial in THE JOURNAL, Dec. 7, 1912, p. 2073.)

75. See editorial in THE JOURNAL March 29, 1913, p. 1002.

78. **Congenital Tuberculosis.**—Harbitz adds one more to the scanty list of cases of unmistakably congenital tuberculosis. He knows of only 120 such cases on record, and only twenty of them all are free from possibility of the infection having been acquired after birth. In his case the mother had a tuberculous process in the interior of the uterus at the point where the placenta was implanted, so that there was every chance for transmission of the tubercle bacilli directly into the blood of the child. The uterus had probably become infected from

an older tuberculous process in the tubes. The mother died from miliary tuberculosis, twenty-eight days after delivery. The child was removed from contact with the mother at once after birth and fed with milk from another woman. It died the twenty-fifth day after birth and extensive tuberculous changes were found in the lungs and lymph-nodes which had every appearance of having been congenital. He has made a special study of the possibility of congenital tuberculosis, but found no evidence of its occurrence in six infants less than five weeks old born of tuberculous mothers. Inoculation of animals gave constantly negative findings. In examining 484 child cadavers, 1898-1911, he found 59 per cent. free from signs of tuberculosis. Of the 41 per cent. with evidences of the disease, in 10.7 per cent. it had been latent or had entirely healed, and in 5.6 per cent. there had been nothing to indicate the disease, but guinea-pigs inoculated with tissue developed tuberculosis. Of the eighty-two infants less than three months old, there was no trace of tuberculosis in seventy-six; of the fifty-five between 3 and 6 months old, forty-six were free from the disease; of the thirty-six between 6 and 9 months old, only twenty were free from it, and of the twenty-eight between 9 and 12 months, only nineteen. Thus up to the age of 6 months only 11 per cent. of the 137 infants were tuberculous, but the disease was evident in 39 per cent. of the sixty-four from 6 to 12 months old. Infants rapidly succumb to tuberculosis when infection is once installed. He has previously reported a number of instances in which the child died in from one to three months after being exposed to tuberculosis directly after birth. All his data speak in favor of the view that infection before birth is extremely rare.

80. **Mongoloid Idiocy.**—Kellner remarks that more children with this form of degeneracy are being brought to his service than formerly but he does not know whether this is due to increasing numbers or to a greater tendency to place such children in institutional care. The aim of his present article is to call attention to the external signs of mongoloid idiocy so as to enable it to be recognized earlier, although, as he adds, there is no treatment for it which promises any benefit. He has never witnessed any improvement under thyroid treatment or under iodid, even when the condition of the heart permitted the use of the latter.

81. **The Cell Inclusions in Scarlet Fever.**—Döhle called attention last year to the cell inclusions in scarlet fever and others have controlled his statements so that 500 cases have already been reported on. Schwenke has examined a number of scarlet-fever patients for the cell inclusions, fourteen with pneumonia and a number of patients with other affections, including eleven with anemia and five with measles. The inclusions were found constantly in every case of recent febrile scarlet fever, less numerous in the milder cases and declining as the disease progressed. After the seventh day scarcely any were to be found. They are no aid in diagnosis, therefore, after the first few days, and they are not pathognomonic for scarlet fever as they occur with the same constancy and as abundantly in croupous pneumonia in children. They are also found more or less numerous or more or less constantly in various other acute and chronic affections. Positive findings are therefore not very conclusive, but negative findings are very important as a negative result in a child with high fever testifies most decidedly against the possibility of scarlet fever. (See editorial in THE JOURNAL, March 8, 1913, p. 750.)

83. **Gastric Ulcer and Spasm of the Pylorus.**—Neudörfer has encountered 120 cases of gastric ulcer requiring operative measures during the last five years. In thirty-nine cases the ulcer was at a distance from the pylorus. In eighteen in this group the stomach was always found empty after six hours, although the ulcer was beyond question and was discovered at the operation. On the other hand he has found cases in which there was retention after six hours and yet the stomach was free from ulceration and nothing else was found to explain the retention. In three cases long continued rebellious stomach disturbances and retention after six hours led him to open the stomach, but nothing pathologic was found and later study of the case showed evidences of spastic constipation. Possibly the tendency to an ulcer may have been cured by the medication with atropin. Ulcers in the lesser curvature induce spasm of the pylorus, even when they are very small, more readily than ulcers elsewhere. He reports in detail an instructive case in which pains in the stomach occurring after eating, radiating to the back and lasting for over an hour, had tormented the patient for three months but there had been no vomiting nor hemorrhage, no splashing sound, no tumor, but nearly all of the bismuth was seen in the stomach after six hours. An exploratory operation revealed a large callous ulcer in the lesser curvature with much perigastritis, the pylorus rigid, the neighboring lymph-nodes enlarged. As there was strong suspicion of cancer and as the ulcer seemed harmless, the pylorus was resected as a hard bunch was found in the rear pylorus wall. The relief from pain was immediate. Nothing was found in the resected portion to suggest cancer and the patient recovered his health completely. On reexamination, five months later, the callous ulcer was found entirely healed. The relief of the spasm of the pylorus had evidently put an end to the condition inducing the ulceration so that this large ulcer spontaneously retrogressed. The case also throws light on the mode of action of gastro-enterostomy with ulcer. It has previously been assumed that the modified chemistry led to the healing, but this case shows that putting an end to the spasm of the pylorus was sufficient alone. His experience has been that resection of the pylorus according to Kocher is neither more difficult nor a longer operation than gastro-enterostomy. He has had no fatality in fifteen and Kocher none in seventeen cases.

84. **Consanguineous Marriages.** — Kanngiesser has been investigating conditions in regard to the offspring in large numbers of marriages between blood relations, comparing them with equal numbers of marriages between persons without ties of kinship. He tabulates the findings which show that mental weakness was found in 4 per cent., impaired vision in 0.5 per cent. and deafmutism in 0.01 per cent. of the offspring of persons where there was no blood relationship between the parents. In the consanguineous marriages the proportions were respectively 9.4 per cent. mentally weak; 3.1 per cent. with impaired vision or blind and 1.9 per cent. deaf mutes.

Petersburger medizinische Zeitschrift

March 28, XXXVIII, No. 6, pp. 67-78

87 History of Serous Meningitis. T. Schwartz.
88 Chronic Bronchitis and Emphysema. V. Zöpffel.

Therapeutische Monatshefte, Berlin

April, XXVII, No. 4, pp. 257-336

89 *Psychotherapy. H. Vogt.
90 Serotherapy of Erysipelas. Welz.
91 The Ear Complications in Scarlet Fever. (Therapie des Scharlachs.) W. Uffenorde.
92 Inadvisability of Permitting Mushrooms in Nephritis. A. Kakowski.

89. **Psychotherapy.**—Vogt discusses this from a general standpoint and then from the relations between the physical and the psychic and the nature of and treatment of psychoneurotic disturbances in general.

He reviews the methods in vogue and their aims, devoting much space to Freud's psychanalysis. This consists essentially of two features, he repeats, "psychocatharsis and sexual analysis." The latter feature, he remarks, has become so morbidly hypertrophied that it has thrown discredit on the whole system, although many still regard Freud as the Copernicus of psychiatry. Binswanger says, "Freud kneels on the conscience of his patient." It is beyond question, however, Vogt continues, that psychic trauma may occur as the result of fright, worry, a sense of shame and distress. He dwells in particular on the importance of psychotherapy in the training of children inclined to be extra nervous, especially the children of parents with a tendency to degeneracy. Calmness and firmness are necessary in their training, and the first days of life are none too early to commence the psychotherapy. The child should be trained to bear pain

and should never be kept away from the sports and games of children of his own age. The "hard school of the street" is particularly needed for such children, as also training in simplicity, self-control and self-confidence, truth and an innate or cultivated abhorrence of the unbeautiful and the vulgar, and avoidance of luxury. Everything should be done to cultivate a healthy cheerful outlook on life and to divert the child's attention from books and theories to practical things, while cultivating a habit of observation and enjoyment of the every-day things of life. In all these things, he emphasizes, the physician can be of infinite guidance and help. It often happens that he will have to counsel the parents and educators, for the first and greatest need is naturally a sound and true example. Parents who cannot control themselves, of course cannot train their children in self-control. [The term "psychocatharsis" applied to Freud's method of psychanalysis is from the Greek *katharos*, "pure," meaning a cleansing process for the soul and mind. "Catharsis" is too good a word to be kept for the intestines alone.]

Therapie der Gegenwart, Berlin

April, LIV, No. 4, pp. 145-192

93 *Tonsillectomy. R. Schreiber.
94 Pancreas Disease. (Die Erkrankungen des Pankreas und ihre Behandlung.) P. Cohnheim.
95 Rabies. (Die Tollwut—Lyssa.) P. A. Hoefer.

93. **Tonsillectomy.**—Schreiber gives an illustrated description of R. Klapp's instrument with which the tonsil is removed with such ease that he declares that the little operation can be done by any general practitioner at his office. In the sixty cases in which it has been used there has never been any after-hemorrhage. The instrument is a modified Luer gouge-forceps. The deep spoons take up the tonsil without crushing it; the only cutting surface is where the blades sever the root of the tonsil. The forceps is held with the open blades above and below the tonsil. It is then pressed against the side wall of the throat, on which the entire tonsil glides into the cup formed by the upper and lower spoons. He gives an illustration of seventeen tonsils thus removed, calling attention to the absence of any crushing or loss of substance; they show merely at the rear the small cut surface. He thinks the pathogenic importance of the tonsil renders it necessary for a technic which can be applied in any physician's office, and which the public will thus learn not to dread. The communication issues from Bier's clinic at Berlin.

Wiener klinische Wochenschrift, Vienna

April 3, XXVI, No. 14, pp. 521-560

96 *Predisposition of the Central Nervous System to Disease. (Pathologische Veranlagung am Zentralnervensystem.) H. Obersteiner.
97 Serodiagnosis of Cancer. (Zur Serodiagnostik der malignen Geschwülste.) F. Schenk.
98 The Biologic Action of Radium. L. Arzt and W. Kerl.
99 Experimental Research on Idiosyncrasies. A. Glück.
100 The Oxydase Reaction. (Die klinische Bedeutung der Winkler-Schulze-Oxydase-Reaktion.) J. Hatiegan.
101 Technic for Treatment with Emanations. (Vorrichtung zur portionenweisen Entnahme emanationshaltiger Flüssigkeiten und Gase.) F. Dautwitz.
102 Roentgenoscopy of Colon Functioning. (Ueber direkte Irrigo-Radioskopie des Kolons.) G. F. Haenisch.

96. **Predisposition of Central Nervous System to Disease.**—Obersteiner comments on a number of affections of the central nervous system which can be explained only by assuming some defect in the development of the parts involved. This organic Anlage can sometimes be determined by clinical tests, but usually it can only be surmised. In the pathogenesis of all nervous diseases there is in all probability, therefore, an endogenous as well as an exogenous factor to be taken into account and the importance of the former must not be overlooked.

Zentralblatt für Chirurgie, Leipsic

April 5, XL, No. 14, pp. 505-544

103 Improved Technic for Extraction of Bullet, etc., under Roentgenoscopy. (Zur Vereinfachung der Fremdkörperextraktion.) A. Schlesinger.
104 Subserous Appendicectomy. N. Kaefer.
105 *Diagnosis and Treatment of Gangrene of the Foot. L. Moszkowicz and R. Frank.

April 12, No. 15, pp. 545-592

106 Restoration of Esophagus. (Ueber plastischen Ersatz der Speiseröhre.) F. v. Fink.
107 To Reenforce the Suture After Operation for Renal Calculi. (Zur Nahtsicherung bei der Pyelolithotomie.) E. Payr.
108 Operative Treatment of Flat-Foot with much Deformity. (Ueber modellierende Osteotomie bei Plattfüssen mit schwerer Knochendeformität.) Perthes.

105. **Diagnosis and Treatment of Gangrene of the Foot.**—Moszkowicz states that it is not necessary to apply a constricting band in diagnosing insufficiency of the arteries of the leg. It is generally possible to learn the true condition by merely raising the leg for a minute or two, when in case of obstruction of the artery it becomes of a corpse-like pallor. Merely raising the leg will not induce complete anemia in this way when the arteries are normal. As the leg is lowered it gradually grows pink again but much more slowly than with normal arteries. Even if the leg is allowed to hang down, one or more of the toes may still look pale after some time. By repeatedly letting the leg hang down and then placing it horizontal, we fill and empty the vessels, thus exercising them as Borchardt accomplishes with his alternating hot and cold baths. The alternating hyperemia and anemia answers the purpose of gymnastics of the vessels and relieves the pain. It is possible that Wieting's arteriovenous anastomosis owes any good results it may have to the stasis induced by ligation of the vein rather than to any actual diversion of the blood-stream. However the hyperemia may be obtained, it can always serve as an index of the functional capacity of the arteries. He warns in conclusion that tissues with insufficient blood-supply are more susceptible to injury than normal tissue; he knows of a case in which the application of superheated air for incipient gangrene of the foot caused a severe burn on the foot.

Frank reports a case in which the alternating baths of hot and cold water for three minutes each, three times in succession, kept up daily for six weeks were able to save the feet of a soldier after they had been frozen and gangrene was apparently installed. One foot is now entirely sound and the other required merely exarticulation of one toe and part of the sole; all the rest recuperated. Without the alternating baths the feet would certainly both have had to be amputated. (See abstr. 148 in THE JOURNAL, April 5, p. 1117.)

Zentralblatt für Gynäkologie, Leipsic

April 5, XXXVII, No. 14, pp. 481-528

109 *Non-Toxicity of Puerperal Urine. (Ueber die Toxizität des menschlichen Harnes im puerperalen Zustand und bei Eklampsie.) A. Zinsser.
110 Action of Roentgen Rays on Fetal Membranes. (Einwirkung der Röntgenstrahlen auf die Eihäute.) M. Kawasoye.
111 Hematoma in Abdominal Wall Developing during Labor. (Ein unter der Geburt entstandenes Bauchdeckenhämatom.) E. Vogt.
112 *Danger of Scopolamin in General Anesthesia. (Zur Skopolaminfrage.) H. Sieber.

April 12, No. 15, pp. 529-560

113 *Pregnancy Carried to Term Five Years After Piccoli Operation for Puerperal Inversion of the Uterus. F. v. Neugebauer.
114 Intraperitoneal Hemorrhage during Delivery from Rupture of Uterus Vein. E. Langes.

109. **Non-toxicity of Puerperal Urine.**—Zinsser was unable to detect any special toxic action in extensive experimental research with urine from normal pregnant women and in nine cases of eclampsia.

112. **Unreliability of Scopolamin.**—Sieber has always protested against the assumption that scopolamin is a harmless addition to the mixed-anesthesia methods. He calls attention to recent publications from the Tübingen clinic which show that the clinic from its former ardent advocacy of the method has now changed to denounce it as unreliable.

113. **Childbirth after Operative Reduction of Inversion of the Uterus.**—Neugebauer adds another to the ten cases he has found on record in which women passed through a normal pregnancy after the inverted uterus had been replaced. The Piccoli method for this aims to correct the stasis edema of the body of the uterus and the relative narrowness of the cervical canal by incising the fundus from the rear. In this case

the placenta was of the bilobar type and he thinks that the implantation on the scar tissue was responsible for this anomaly. He urges study of conditions in regard to the implantation of the placenta on the old cicatrix in every case of repeated cesarean section or similar operation. He cites Mansfeld's recent communication of a fatality following expression of a large clot from the uterus two hours after spontaneous delivery. The uterus became inverted after the maneuver and although it was easily reduced yet the young woman died eight and a half hours after spontaneous delivery. The necropsy revealed extreme hypoplasia of the adrenals and lymphatic system. In both adrenals together there was only one-quarter of the normal content of epinephrin. He thinks this case is very important as it shows that the atony of the uterus in such cases is probably the result of the abnormally low proportion of epinephrin in the blood. We know that epinephrin has a special action on the tonus of the uterus, and when there is atony of the organ, not to be explained by degeneration of the muscle, the trouble is due to abnormally low tonicity of the sympathetic system. Uterine hemorrhages independent of changes in the uterus and ovaries and rebellious to all measures are generally encountered only in young lymphatic girls or women of the thymicolymphatic status. The practical conclusion follows that uterine hemorrhage in these cases should be combated with epinephrin.

Zentralblatt für innere Medizin, Leipsic

April 12, XXXIV, No. 15, pp. 369-392

115 Cell Inclusions in Scarlet Fever, Diagnostic Importance of Negative Findings. (Zur Frage nach der Bedeutung der Doehle'schen' Leukocyteneinschlüsse beom Scharlach.) A. Lippmann and A. Hufschmidt. See abstr. 81 above.

Gazzetta degli Ospedali e delle Cliniche, Milan

March 30, XXXIV, No. 38, pp. 393-408

116 Diuretic Action of Hypophysis Extracts. L. Lucatello.

April 1, No. 39, pp. 409-414

117 Dislocation of the Carpus. R. Mosti.

April 6, No. 41, pp. 423-438

118 *Influence of Food on the Incubation of Rabies. (Influenza della alimentazione su la incubazione della rabbia.) M. Marcialis.

April 8, No. 42, pp. 439-446

119 Mumps and Sterility. (Orecchioni e sterilita nell'uomo.) G. Giovanni.

April 10, No. 43, pp. 447-455

120 *Helminths from Surgical Standpoint. (Importanza patogenetica dell' elmintiasi da ascaridi specialmente in rapporto ad affezioni chirurgiche.) R. Cinaglia.

118. **The Food and the Incubation of Rabies.**—Marcialis reports attempts to determine whether feeding or inanition had an influence on the development of rabies in dogs after infection. No influence was apparent when the rabies had been inoculated directly into the nervous system or had already reached the nerve centers. But when the virus was inoculated at remote points, it reached the nerve centers the more rapidly the better fed the animals. That is, the more active the metabolism the earlier the virus is conveyed to the nerve centers.

120. **Helminthiasis and Surgical Affections.**—Cinaglia comments on the prevalence of helminths in children. In Italy some have reported 60, 96 and 39 per cent. affected with ascarides among large numbers of children examined. Pagliari found ascarides in 90 per cent. of the country children but only in 10 per cent. of the children living at Rome. Cinaglia recently operated in a case of supposed appendicitic ileus which proved to be obstruction of the small intestine by ascarides, and he discusses the ways in which helminths enhance the dangers of abdominal operations in general.

Policlinico, Rome

April 6, XX, No. 14, pp. 473-508

121 Myoma Plus Tuberculosis of Female Genitals. (Adenomioma dell' utero e tuberculosi utero-annessiale complicata.) P. Costantini.

Riforma Medica, Naples

April 5, XXIX, No. 14, pp. 366-392

122 Traumatic Hemiplegia. (Sull'attuale indirizzo della traumatologia e della ortopedia.) R. Dallavedova.

Brazil-Medico, Rio de Janeiro

March 1, XXVII, No. 9, pp. 81-90

123 Simultaneous Disease of Thyroid, Testicles and Hypophysis. (A syndroma thyreo-testiculo-hypophysaria.) A. de Castro.

March 8, No. 10, pp. 91-100

124 Palm Buds as Food. (Pesquiza bromatologica sobre o palmito.) A. Carini and C. Chiaves.

March 15, No. 11, pp. 101-110

125 *The Urochromogen Urine Test. (A reacção do urochromogeno de Moriz Weisz.) U. Paranhos and V. Giolito.

126 Primary Congestion of the Lungs. (Congestões primittivas do pulmão.) C. Fraga. Commenced in No. 8.

127 Tuberculosis of the Bladder. B. P. Leme.

125. **The Urochromogen Reaction in Urine.**—Paranhos and Giolito applied the Weiss potassium permanganate test to the urine from fifty healthy persons, obtaining constantly negative results. In fifty tuberculous patients the test was positive in all but five cases; in three of the latter the disease was very far advanced. The test was thus positive in 90 per cent. of the tuberculous cases, but it did not seem to be dependent on the severity of the disease. They also applied it in fifty other cases in various diseases, including nine with syphilis (positive in six), and eleven with nephritis (positive in one); a positive reaction was obtained in twenty-four of these fifty nontuberculous cases. (For the technic, see abstract 112 in THE JOURNAL, Sept. 21, 1912, p. 976.)

Hospitalstidende, Copenhagen

March 26, LVI, No. 13, pp. 329-360

128 Successful Resection of Cystic Kidney. (Et tilfælde af opereret Nyrecyste.) F. Thorborg.

April 9, No. 15, pp. 385-416

129 Technic for Gall-Stone Incision. (Om Bugvægssnittet ved Operationer paa Galdevejene.) N. P. Ernst.

130 Suppurating Chondritis Following an Operation for Encapsulated, Perforated Gastric Ulcer. S. and J. Nordentoft. Commenced in No. 14.

131 *Gall-Stone Ileus. P. Møller. Commenced in No. 12.

131. **Obstruction of Intestines by Gall-Stones.**—Møller analyzes the twenty-two cases of gall-stone ileus in which he has operated and comments on the peculiar mingling of symptoms from the cholelithiasis and from the obstruction of the bowel by the concrement; the phenomena are of both an acute and a chronic character. There had been no previous symptoms of cholelithiasis in quite a number of the cases. Typical colics had occurred in six cases and vague suspicious symptoms in five others—thus only in 50 per cent. of the total. In three cases and in one reported by Lund, the ileus was the first sign of trouble. In a few cases blood in vomit or stools with vague symptoms in the stomach region were ascribed to ulcer or cancer but in reality they were the signs of a fistula developing between a bile duct and the bowel. The ileus developed in one case immediately after a sudden physical strain and in another after a course of oil. It is characteristic of gall-stone ileus that the general condition seems to suffer comparatively little although the bowel may be totally obstructed for three or four weeks.

As a rule the pulse keeps strong and regular although in exceptional cases the ileus may prove rapidly fatal. The vomit may contain little or no bile but there may be blood from the fistula edges. When the stone is in the duodenum below the papilla or in the upper part of the jejunum, the vomit may contain large amounts of bile. There is little tenderness on pressure; tenderness in the biliary passages region may occasionally be noted but scarcely more with localized peritonitis than without. In only four cases could the stone be felt through the abdominal wall. There was no jaundice in his cases and no fever until peritonitis developed, and not always then. The patients generally die or recover in from six to ten days, the stone breaking loose and passing on and out. In one case in the literature the stone thus was expelled after eleven weeks.

Even when the abdomen is opened, the diagnosis is difficult; in a number of instances the conditions first found were assumed to be sufficient to explain the ileus and no further search for a gall-stone was made, and it thus escaped detection. In only three cases was the ileus traced to its true cause before the operation. Only four of the twenty-two patients survived; the mortality was thus 82 per cent., but

six patients were quite elderly and two died from pneumonia. All had suffered two weeks or more from their ileus and were growing constantly worse under medical measures, so that probably all would have died without the operation.

It is evident that operative treatment should be applied before the patient has been too seriously injured by the effects of the bowel obstruction. In two of the three cases with a favorable outcome the operation had been done early. Purgatives are liable to aggravate the spastic factor in the ileus although otherwise indicated. Morphin masks the alarming symptoms without removing their cause. Atropin and olive oil have occasionally been found useful, but the main reliance is on copious enemas, systematically flushing the bowel. The rectum should be examined for stones not only at first but as they may find their way into it later.

In one of the cases described, the stone felt in the rectum was supposed to be a cancer. The stone can sometimes be worked loose from outside and sent on its way. As the intestinal walls have generally suffered from the impaction, he tries to push the stone back into the bowel a little way, until it reaches sound tissue, before manipulating to launch it. One patient had one stone in the colon and one in the gall-bladder and two others had several additional stones in the gall-bladder. Møller's communication emphasizes anew the grave prognosis of obstruction of the bowel from a gall-stone although conditions on the whole are much more favorable in this than in ileus from any other cause.

Hygiea, Stockholm

March, LXXV, No. 3, pp. 193-320

132 Trauma in Connection with Tumor Growth. (Svulstbildning och olycksfall.) J. Akerman.

133 *Purulent Arthritis in Infants. (Om purulenta spädbarns artriter och deras betydelse för framtida deformiteter.) E. Edberg.

134 Tumor in Pineal Gland. I. Hedenius and F. Henschen.

135 Metastatic Sarcoma in the Heart. I. Hedenius and F. Henschen.

136 Spinal Cord Tumor with Intermittent Symptoms. (Fall af ryggmärgstumör med öfvergående remissioner.) I. Hedenius and F. Henschen.

133. **Suppurative Arthritis in Young Infants and Crippling Later.**—Edberg gives the details with skiagrams taken at the time and later of seven cases of purulent arthritis in infants from ten days to eighteen months old, at the children's asylum in charge of Floderus. The average frequency, judging from the statistics in the literature, seems to be about 1 to 1,000. Septic coxitis was evident in one case. Pneumococci were found in one; in this and in one other case the arthritis had been preceded by a febrile enteritis, the swelling of the joints following close on this. The other children had all been previously healthy and only two were bottle-babies. Staphylococci were found in three cases, diplococci in one. No bacteriologic examination was made in two cases. The skin and accessible mucous membranes were normal in all and the skin tuberculin test was constantly negative. The first case was in an infant of 18 months who developed an abscess in the left hip joint. It was evacuated and after ten weeks the child was discharged wearing a plaster cast which was soon discarded. At the age of 7 there was complete dislocation of the hip joint, treated by operative reduction. The limb is still—a year later—2.5 cm. shorter than its mate but otherwise the deformity has been clinically corrected. In the second case an abscess developed in the right hip of an infant of three weeks. After it had been drained and had healed, conditions developed similar to those of ordinary congenital dislocation. Edberg is trying to correct this with a plaster cast at present; the child is now 2 years old. In the third case the abscess developed likewise in the right hip joint, in a five-months infant and staphylococci were found in the pus when the joint was opened two weeks after the first symptoms. Two years later the limb was found 2 cm. shorter than its mate and conditions were corrected by an operation. The same findings as of congenital dislocation of the hip joint were found at the age of 2 in another child who had had an abscess in the left hip joint at the age of 3 weeks. In the fifth case the ten-day-old infant of a woman who had had pregnancy nephritis developed an abscess in the right shoulder. It apparently healed after evacuation but recurred eight months later and staphylococci were found in the pus from the bone focus; the latter had not been discovered at the first operation or possibly had not existed, the abscess apparently merely encircling the joint. In the sixth case an infant 5 weeks old had a similar acute process in the shoulder. As this healed the knee became involved, but healed likewise after evacuation; staphylococci were found in the pus from both processes, but reexamination three years later showed no trace of anything abnormal. The seventh infant had been healthy until at two months gastro-intestinal disturbance caused much debility and both knees developed a purulent process with diplococci; the incision released 100 and 150 c.c. of a purulent fluid resembling in every respect that from an empyema in the lung and containing diplococci and streptococci but the functioning of the joints did not seem much impaired. To prevent a tendency to contracture the child is now wearing a cast; it is not quite a year old yet. Edberg remarks that, judging from the literature, arthritis of gonorrheal origin in young infants seems to have a comparatively favorable prognosis, not entailing ankylosis. The injury from an early arthritis seems to be mainly in the interior of the joint. He admits that it is possible that in some of the youngest infants there may have been a congenital dislocation. A purulent affection of the knee does not seem to impair functioning later if treated correctly in time, according to his experience with three knees in two of the above cases. The joint is spacious and conditions favor healing better than in the other large joints. In the shoulder case there is atrophy of the head but no tendency to habitual dislocation.

Ugeskrift for Læger, Copenhagen

March 27, LXXV, No. 13, pp. 531-552

137 Minor Operations on Ear, Nose and Throat. (Om Chirurgia minor i Øre-, Næse- og Svælgsygdomme.) K. Nørregaard.

April 3, No. 14, pp. 553-598

138 *Importance of Esophagoscopy for Detection and Removal of Swallowed Foreign Bodies. (Bemærkninger om Diagnosen og Behandlingen af Fremmedlegemer i Spiserøret.) Schousboe.

139 Technic for Gastroscopy. E. Madsen.

138. **Esophagoscopy for Foreign Body.**—Schousboe reports a few typical cases to reaffirm once more the great value of direct visual inspection in case of a foreign body in the esophagus. He regards the blind application of the sound in treatment as actual malpractice. The ease with which under esophagoscopy the foreign body can be seized and worked loose and cautiously extracted is emphasized anew by these experiences. In one case a woman of 42 had had a fragment of a set of teeth in her esophagus for three months without her knowledge, slight difficulty in swallowing being the only trouble and nothing suspicious of a foreign body being known. Investigation with a sound gave no information and radioscopy would probably have given negative findings, but the esophagoscope revealed the foreign body at once and made possible its removal although it had already caused a fistula requiring tedious treatment. In another case a man had swallowed a piece of a chicken bone and the physician tried to push it down into the stomach but it lodged low down. As there was not much pain and esophagoscopy proved impossible on account of the restlessness and retching, further measures were deferred, but the next day the temperature ran up to 104 F. and the esophagoscope was then introduced under local anesthesia. It passed to the cardia without meeting resistance but as it was withdrawn the bone was discovered lodged across the lumen, 32 cm. from the teeth. This case illustrates the danger from trying to push the foreign body farther down as it was thus forced to such a depth that esophagoscopy became very difficult. The sudden high temperature showed that mediastinitis had set in, and the esophagoscopy came just in time. Schousboe declares that in future he would never defer the measure in such a case even if it required general anesthesia, as there is no doubt that this patient had been in very grave danger.